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THE NATIONAL METALWORKING WEEKLY



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AGE

Many steel mill executives, both in this country and abroad, have recognized the advantages and efficiency of WEAN SHEET, STRIP AND TIN MILL EQUIPMENT. The same recognized advantages are available for overcoming your problems.

ECIALISTS IN SHEET, TIN and



As the white outline indicates, a standard unit of much greater frame size would be required to do the work of Speedaire. In fact, Speedaire is 37.2% smaller in cubic content, 12% lighter in weight and 14.5% lower in initial cost.

Photo by courtesy of R. C. Mabon Co., Detroit

up more space than the mill itself and interfered with up more space man me min usen and interiered with moving materials into and out of the machine. The new moving materials into and out of the machine. The new drive, the small, but powerful Speedaire in the lower left drive, the small, but powerful speedaire in the lower left foreground, occupies less than 3% of the old drive space. Speedaire is Cleveland's fan-cooled worm-gear speed reducer. Because it is fan-cooled, it does more work...will reducer, Decause it is ran-cooled, it does more work...win deliver up to double the borsepower of standard worm units of equal frame size, at usual motor speeds. It can be inor equal frame size, at usual motor specus. It can be in-stalled economically on many applications where other statled economically on many applications where other types have been used heretofore—giving you the advantage types nave neen used neretorore—giving you the advantage of a compact right-angle drive. Speedaire gives the same or a compact right-angle urive. specuaire gives the same fong, trouble-free service characteristic of all Clevelands. For full description, send for Catalog 300. The Cleveland ror tull description, send for Catalog 300. The Cleveland 4, Ohio. Worm & Gear Co., 3252 East 80th St., Cleveland 4, Affiliate: The Farval Corporation, Centralized Systems of Dinate: 1 De Parvai Corporation, Centralizea Systems o Lubrication. In Canada: Peacock Brothers, Limited.





Designing and manufacturing fastenings to meet unusual requirements satisfactorily and economically is a specialty of Bethlehem's Lebanon, Pà., Plant. Fastenings engineers at Lebanon work closely with the customer. They make a thorough study of the problem and on that basis work out a design for a fastening that is certain to give a good account of itself.

The special fastenings shown here are a few taken at random from among the hundreds of unusual types turned out continually by Lebanon Plant. "Specials" are of course in addition to the full Bethlehem line of standard bolts and nuts, rivets, spikes, and the like.

If you need a "Special", talk it over with us. We have a background of broad experience to draw on, and the chances are good that we'll come up with a design that will prove practical and economical.

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JANUARY 26, 1950 . . . VOL. 165, No. 4

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THE IRON AGE

Special Report



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AGE

"Steel and Housing," a Special Report to IRON AGE readers, tells why the steel market in home building remains untapped, and gives an analysis of the quantity of steel used in homes, the building boom, and the present steel market. What this market is, how big it is, and what the prospects are for tapping it are included.—p. 61.

Issue Highlights



It often pays to set up pipe mills in areas where large diameter pipelines are to be laid. This may be particularly true for foreign countries. A study shows plant layout and describes equipment and production rates of the Basalt-Yoder process.—p. 77.



Styling changes requiring deeper draws on automobile front fenders brought Buick to the point where 1949 fenders had to be heated to draw the nose. Now a new technique preforms the blank which is bent and welded to near the final draw size, eliminating the reheating formerly required.—p. 73.



This promises to be the first "normal" year in a decade for the scrap industry, meeting this week in Washington for its annual convention to draw up a blueprint for 1950.

—p. 85.



Alan Wood Steel Co. opened its new 6-stand hot-rolled strip mill at Conshocken this week. This is the first mill of this type in eastern Pennsylvania.—p. 87.



Steel producers are keeping one eye on production and the other on demand. First quarter business looks good for most companies. Some expect the strong demand to carry on into the second quarter but others are not so sure.—p. 88.

Coming Next Week



Two recently announced bessemer free machining steels, developed by Jones & Laughlin and Carnegie-Illnois Steel Corps., resulting in remarkable increases in machinability in automatic screw machine operations are presented in an article appearing next week. The improved machinability of these steels through closer control of carbon, manganese, and silicon, and improved bessemer operation, along with examples of the improved machinability are given in this presentation.

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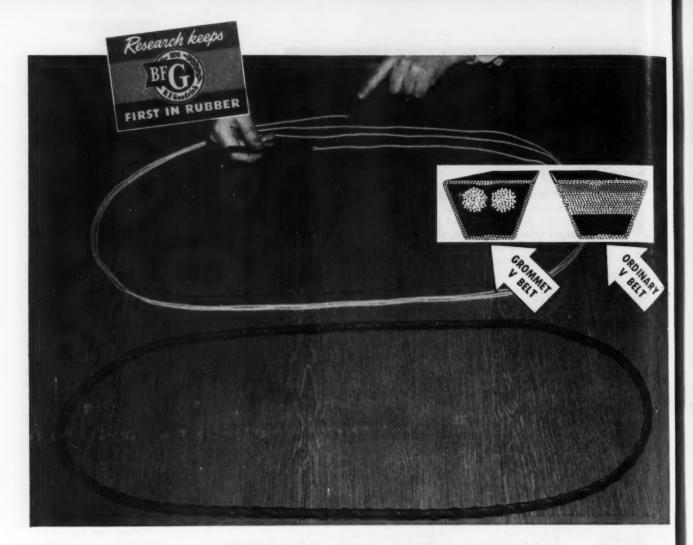
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Growner Betts BY

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Editorial

INDUSTRY VIEWPOINTS

Scrap People Are Free Enterprise

SCRAP people have always been a favorite of ours, especially in these days of attempted control by government. They are free operators. They are individualistic. They take chances. They suffer. They are happy one day and down the next. But they bring home the bacon when the iron and steel industry needs iron and steel scrap.

During the war they did a grand job. Everyone was told about it. But they do a good job in peacetime too. No one ever stops long enough to think what they represent. That's why we write about them.

They really represent a race of vanishing Americans. They take more chances than anyone else. Sometimes they lose a lot of money and then sometimes they make out pretty well. But they have to guess more than others about the future.

Many years ago they were referred to as "junkies." Well they might have been junkies then but they produced the scrap that was needed. Scrap that might have rusted away. Scrap that was once known as "just scrap." Today they are producing the scrap that keeps things in balance in the steel industry. They are modest to outsiders because they have so many arguments among themselves.

They have grown up in recent years. They are officially known as dealers and brokers. But to us they are not only that. They are people, with a capital P. As long as they are doing business we will know that free enterprise is still with us.

Early this week at Washington they had their annual convention. They went through all the regular things that happen at conventions. They talked about public relations. How to do the job better. What scrap means to the economy. They listened to committee reports.

But while that was going on there were some good deals made right at the convention. You can no more make scrap sellers and buyers stop doing business around the clock than you can fly.

We just wanted to tell you about a group of people who are a small but important cog in the wheel that makes iron and steel possible.

Tom C. Campbell

January 26, 1950

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The famous $U \cdot S \cdot S$

NEWSFRONT

NEWS, METHODS AND PRODUCT FORECAST

The ratio of electrolytic to hot-dipped timplate shipments will prove to be about 55 to 45 for 1949—reversing the 45-55 ratio of 1948. By 1951—even in the unlikely event that the trend is halted—there will probably be insufficient electrolytic capacity to meet demand.

This despite the fact that Weirton will soon start up a fast new electrolytic line rated at 5 million base boxes annually and several other companies plan improvements to speed up their lines.

- To convince a doubtful equipment manufacturer of the value of air-powered screwdrivers, a demonstration was set up to show that the air tools could do the job in one-fifth the time normally required. When the demonstration was run off, he bought 46 at a cost of \$3680. They paid for themselves in 10 days.
- While ceramics have proved too brittle for aircraft turbine blades, "ceramels," composed of ceramics and metals, appear to have good possibilities. A ceramel blade containing 80 pct titanium carbide and 20 pct cobalt has been run at high temperature for 110 hr. Some engineers are not too optimistic about prospects for all-metal blades that will stand up under the jet engine's 3500°F operating level.
- Just because several big automobile plants have moved into steel mill backyards does not mean others move there willy nilly. Both inbound and outbound freight must be considered, in addition to labor supply and type, taxes, etc. But where these factors fit there may be more moves.
- The Navy has developed a machine for measuring wear on metal surfaces which it says has proved accurate to within 0.00005 in. in measuring wear on chrome plated diesel engine cylinder liners. The device does not require use of the whole cylinder, it uses only a small strip specimen.
- Chicago area steel mills are considering the possibility of regularly bringing in <u>coal by barge</u>. The idea is attractive because barges move on inland waterways which are open all year round while Great Lakes navigation is closed for most of the winter. Rates are lower than rail, too. <u>Two companies have brought in trial shipments</u> to study scheduling and handling problems.
- Armour Research Foundation has undertaken to study the structural changes in <u>titanium base alloys</u> resulting from heat treatment. The work is directed toward speeding development of a new family of lightweight high strength alloys.
- An inexpensive method of mounting metallurgical specimens in synthetic resin requires no external heat. The resin sets under pressure at room temperature.
- The trend toward use of progressive dies to make small auto parts—in which coiled steel is automatically fed through a series of dies—is not likely to be extended to large stampings. To date, progressive dies have been used almost exclusively for small parts not subject to styling changes.
- A company not now in the field is testing various combinations of construction designs with an eye on <u>prefabricated housing</u>. The basic panel uses lightweight steel members and would serve as a base for stucco exteriors and for plaster interiors.

January 26, 1950

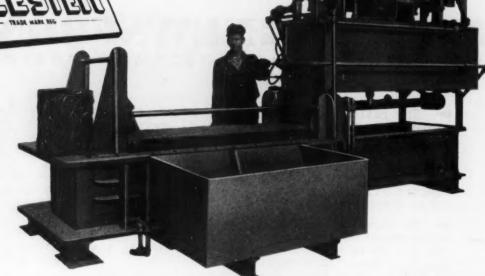
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Portable press that produces compact bales measuring 10" x 12" x 16" at rate of 11/2 to 2 tons per hour.

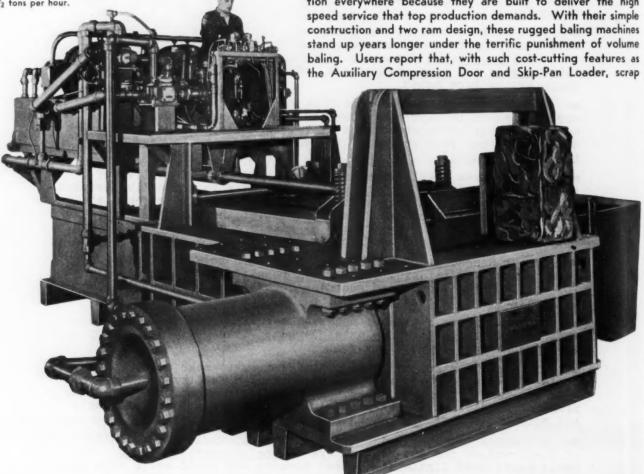


"600"

Turns out high density 16" x 18" x 35" bales at rate of 6 to 71/2 tons per hour.

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Total Steel Business Is High

The Iron Age SUMMARY Demand Varies By Product, Area

Coal Shortage Pinching Some IRON AND STEEL INDUSTRY TRENDS

NATIONWIDE study of steel demand just A completed by THE IRON AGE shows total steel business at an exceptionally high level, sparked by strong demand for consumer durable goods. Where business is based on capital goods the pressure for steel is much easier, particularly in the East.

The study shows that the intensity of demand varies by areas as well as by products. Chicago tops the list on steel demand. There, almost all steel products are being allocated by the mills, with the principal exceptions of heavy plates and structural shapes.

Pressure for Sheets Is Intense

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AGE

In Pittsburgh the situation on plates and shapes is easier. Bars, too, are easy to get. In the East the same holds true. But nowhere is cold-rolled sheet supply equal to demand. Demand for galvanized sheets is so strong that a new order would have little chance of being filled for half a year.

Sheets are the only item involved in conversion deals such as those which highlighted the 1948 and early 1949 markets. Some of the automobile companies are the only manufacturers presently interested in this costly method of obtaining steel products. One reason is that the automakers are building stocks because they expect to use more sheets this spring than the steel industry can supply them.

Still, the steel market this week shows a marked contrast to January 1949. There are four important reasons for this: (1) Consumers today are more cost conscious. (2) They are looking for nearby sources of steel supply to save freight charges. (3) They can't pass on high freight charges and conversion costs to the customer as they could a year ago. (4) There is less hysteria today, more feeling that the sheet shortage will not last beyond March or April.

Demand Seen on Sounder Basis

But for these very reasons steel men today believe that demand for their products is on a sounder basis than it was a year ago. They see it in their customers' order patterns, which appear to be based on a sounder appraisal of the ultimate market than they were a year ago. They feel that orders are less likely to take a sudden nose dive like they did last spring. They expect orders to level off this year, but they expect the process to be more gradual, hence, less painful for all concerned.

Admittedly, much of the present tightness in sheets is due to pressure from Detroit. And while some steel people are inclined to believe automakers are overconfident of their market, they recall that they said the same thing all last year-and, fortunately, were proven wrong.

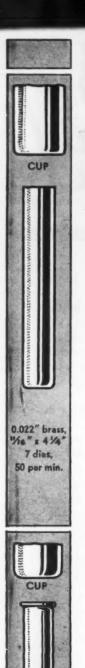
The outlook for stainless steel is good. This is in sharp contrast to what it was 6 months ago. The brighter view on stainless has been brought about by a combination of new markets and revival of regular order sources. Even the alloy business, expanded by war demands to a point far above normal peacetime level, is in good shape. Deliveries are fairly prompt.

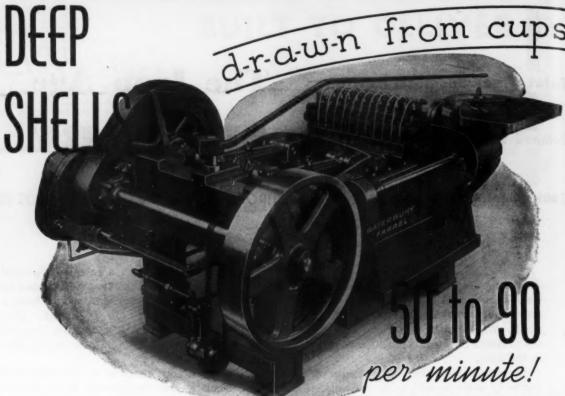
Coal Situation Is Critical

The war of attrition John L. Lewis has been waging with the coal operators moved a step nearer its climax early this week. There were indications that in his efforts to "stabilize" the coal industry, Mr. Lewis was, in fact, flattening important segments of other industries, including railroads and power companies.

The steel industry was also catching its lumps for lack of coal. Although the foresight of several large companies in stockpiling coal the past year will permit them to continue operations for an indefinite period, the industry is not uniformly lucky. At least three companies are known to have curtailed production. Other operations will be affected within a week.

Squeezing every possible ton of steel out of its dwindling coal stocks, the steel industry this week scheduled ingot operations at 94.0 pct of capacity, based on 1950 capacity figures. There was generally little activity in the scrap markets although a \$1.00 a ton rise at Chicago edged THE IRON AGE scrap composite up 33¢ a ton to \$26.75





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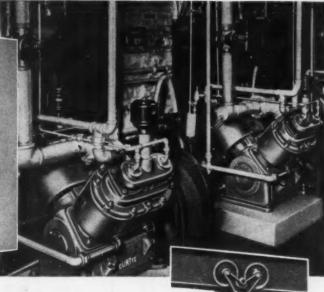
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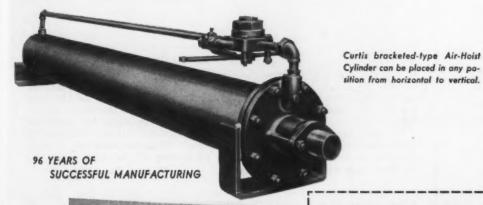
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CITY_

January 26, 1950

First cost is only a part of the overall cost of your springs



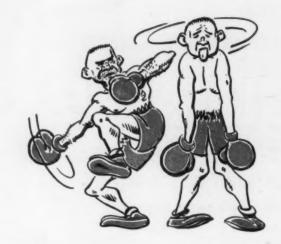
Cost conscious spring buyers know that the first cost does not present the complete picture of spring costs. Uniformity, ease of assembly into your product, on-time delivery are just a few of the other factors that can affect the ultimate cost of your springs. In some cases a minor modification in design can cut costs without any loss of quality. We at Accurate are confident that our springmaking "know-how" and facilities can lower the overall cost of your springs. We have done this for many manufacturers and will be pleased to cite actual cases. Most of all we'd like to show you what we can do for you. Phone or write today for prompt attention.



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Fatigue Cracks

By Charles T. Post

Crystal Ball

The big danger in sticking your neck out to make long range predictions is that there are some people who call you to account later. People like David Crampton of Wallace & Tiernan Products, Inc., for instance.

For the Jan. 1, 1948, issue of your f.f.j. the crystal ball section of the brains department went into closed conference with some of the top Detroit automobile designers and evolved a composite picture of what the automobile of 1950 would look like (see below). Most readers smacked their lips at this glimpse into the future and turned to other interests, but Reader Crampton put it in his follow-up file marked for Jan. 1, 1950.

"It came up with a smile," he wrote us last week, "and it is interesting to see that progress has not been quite as fast as the "ideas

of top Detroit designers' thought in 1948. However, it is fun to guess ahead, and certainly a few of the small features have appeared in one form or other already. I thought you might be interested to know that at least one of your readers had saved this to check on 2 years later."

Granted, the boys had a little too much Buck Rogers styling in their conception, but they certainly nailed down some of the broad style changes that have occurred. For instance, there's the one piece bumper-grille with the "falsies" leading the way, just as they appear on the new Buick.

Then there is the long, sweeping fender line extending all the way along the side of the body; the increased glass area; low pressure tires; and the enclosed front fender, which Nash has adopted. There's an inkling of the notch back, al-

Turn to Page 117





It just LOOKS easy

That ski jump is smooth and looks simple but appearances deceive. It's the product of practice to develop skill, precision and timing.

Making fine steel also demands skill, precision and timing. Here at Wisconsin Steel through metallurgical control, we exercise the greatest care in producing every heat of steel.

Our product is made for an exacting clientele—our customers. It must meet their specifications. Find out about Wisconsin Steel *Quality Products* by contacting our sales and metallurgical staffs. They are ready to serve you.



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180 North Michigan Avenue • Chicago 1, Illinois

WISCONSIN STEEL

January 26, 1950

Iron Age The Introduces



H. L. BILLS, vice president in charge of industrial relations, Acme Steel



CHARLES E. LOVE, vice president in charge of sales, International Business Machines Corp.



WILLIAM H. GRAVES, vice president of engineering, Packard Motor Car Co.

H. L. Bills was elected vice president in charge of industrial relations for ACME STEEL CO. of Chicago. He had served as director of industrial relations for the company since 1937.

M. J. Graham, plant manager for ALLEGHENY LUDLUM STEEL CORP. in West Leechburg, Pa., has been named production manager for all plants of the company. F. G. Benford, assistant plant manager at West Leechburg, succeeds Mr. Graham as plant manager. Mr. Benford is succeeded by W. R. Yingst, assistant manager of the West Leechburg plant finishing department.

Thomas J. Moore, Jr., was appointed vire-president and general manager of BRAINARD STEEL CO., Warren, Ohio. He will continue to act as vice president of SHARONSTEEL PRODUCTS CO.

Charles E. Love, who has been serving as general sales manager of INTERNATIONAL BUSINESS MACHINES CORP., was elected vice president in charge of sales at a recent meeting of the company's board of directors.

Arthur P. Shanklin, vice president of CARRIER CORP., Syracuse, N. Y., was placed in charge of its staff division, and will be succeeded as head of the sales division by O. W. Bynum, who has been elected a vice president.

C. Swan Weber takes over as manager of the eastern district of the WESTINGHOUSE ELECTRIC CORP. with headquarters in New York. Mr. Weber, who has been managing the office at Newark, N. J., takes over the position formerly held by H. H. Rogge, vice president.

William H. Graves was named vice president of engineering of PACK-ARD MOTOR CAR CO. to succeed Col. J. G. Vincent. Mr. Graves has been administrative head at the Packard engineering division since April 1949.

David C. Peterson was appointed director of engineering and manufacturing of division one of STEWART-WARNER CORP. in Chicago. Mr. Peterson assumes the post formerly held by George Thomas, who was named production consultant to the senior vice president.

Fred M. Shelley, Jr., and Alfred G. Dennison were appointed to the posts of general sales manager and assistant general sales manager, respectively, at RIVERSIDE METAL CO., Riverside, N. J.

Iron Age, Salutes

CHARLES L. HUSTON



JOHN M. TUTHILL, manager of flat rolled sales, Youngstown Sheet & Tube Co.

John M. Tuthill has been advanced to manager of flat rolled sales for YOUNGSTOWN SHEET & TUBE CO. of Youngstown, succeeding Walter E. Scott who retired recently after 43 years with the company.

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Ernest S. Kopecki, formerly metallurgical editor of THE IRON AGE, recently joined the PENNSYLVANIA SALT MFG. CO. as a sales service representative in the special chemicals department in Philadelphia.

R. C. Lewis has been named assistant sales manager of the THOMAS STEEL CO., Warren, Ohio. Mr. Lewis had been sales representative prior to assuming his new position. N. D. Tilbury, the company's Buffalo representative, will succeed Mr. Lewis.

Turn to Page 110

CHARLES LUKENS HUSTON will soon be 94 years old. But he has no thought of retiring as first vice-president of Lukens Steel Co.

The sage of Lukens has already worked nearly 30 years past the "normal" retirement age. And he still likes his job. He still keeps himself available for counsel to the younger men of the company.

Mr. Huston is a grandson of Dr. Charles and Rebecca Lukens, for whom the company is named. He started working for the firm Dec. 15, 1875, as a clerk and bookkeeper. Today, his interest in the company is as keen as it was then.

Actually, his association with the company spans 78 years. While still in his teens he wheeled coal and helped with other mill chores —without pay—while on summer vacations from school.

For his first full time job as clerk and bookkeeper he got \$8.00 a week. He still gets a kick out of talking about that first job. "I saved money at that," he remembers smilingly.

Despite his literary studies at Haverford College, of which he is the oldest living alumnus, his chief interest was always in mechanical things. Here's how he describes his feelings when opportunity finally came for him to go into Lukens' puddling mill under the guidance of his father's partner, Charles Penrose:

"I didn't let it pass me by. I didn't know too much about the puddling of iron to make it malleable by expelling carbon. But I asked my fellow workmen to help me. They did. And we got on famously well." [He played an important part in this development.]



This remark is characteristic of the man. He has always been one to respect the opinions of others. Whenever there was doubt in his own mind he would seek advice from friends or fellow-workers. He still believes in teamwork—that several heads are better than one.

He has been a leader in the development of steelmaking. Included in his work are several highly regarded inventions patented by him. Also credited to him is the planning and designing of the world's largest plate mill (Lukens' fourhigh 206-in. mill). In addition he was largely responsible for the installation of the first head-spinning machine at Lukens.

About a year ago a broken leg threatened to end his life, as well as his career. But it was patched up, with the aid of a steel pin. He is still forced to spend part of his time in a wheel chair, although he can walk about a bit. His general health is good and he enjoys working at his job as first vice-president.

METAL FORMING NEWS

OTHER FENN-STANDARD ROLLING MILLS

Fenn-Standard makes rolling mills for the rolling of ingot, rod or strip and are built to your requirements.

Four-High Precision Mills roll stock to uniformly close tolerances.

Three-High Mills are available for rolling rod — grooved rolls reduce billets of ferrous and nonferrous metals to rod.

Two-High Mills emboss and do general sizing and finishing work.

Roll sizes for these mills vary 1½" diameter and 1" face to 16" diameter and 18" face. They can be furnished for both hot and cold rolling, or for grading, cross and pinch rolling or forming wire to dimensions.

Roll speeds range from 10' to 500' per minute. Numerous attachments are available for special work, making the basic Fenn-Standard Mills highly versatile machines.

Tandem Wire Flattening Mills Speed Output, Cut Costs

Wire flattening mills which do the complete flattening operation in a single pass, and which operate at speeds up to 2000 feet per minute, are taking over more and more jobs in the metal industries as manufacturers search for new ways to cut production costs and speed output.

Ability to handle ferrous or non-ferrous alloys and stainless steel rapidly to close tolerances enables Fenn-Standard mills to lower unit costs substantially below equivalent work done on single stands.

Up To Five Stands On Tandem Units

The principle of tandem operation saves a great deal of handling and lessens

the number of operators required on any given job. Fenn-Standard mills can be obtained in tandem units up to five on a single stand or base. Roll diameters from 3.5" to 12" allow these mills to handle the whole range of commercial wire sizes.

Tandem mills provide the most efficient wire flattening method known. Industrial plants have been converting their plants from single stand operation to tandem units to get the benefits of reduced costs and greater output.

Precision Engineering Accounts for High Performance of Tandem Mills b ri c

Modern design, careful engineering, generous dimensions of parts and close tolerances account for the extraordinary performance of Fenn-Standard tandem mills. Yankee craftsmanship combined with carefully controlled materials help account for their high production rates and minimum maintenance over a long service life.

Roller Bearings are used on roll necks and preloaded ball bearings in pinion stand.

Each mill stand is driven by herringbone pinion stands through universal joints to the roll necks in order to eliminate chatter marks on the work.

Rolls are easily raised and lowered through the individual or simultaneous operation of screw downs.

Rolling speeds are electrically synchronized from stand to stand.

Cooling of rolls is either internal or external at your option.

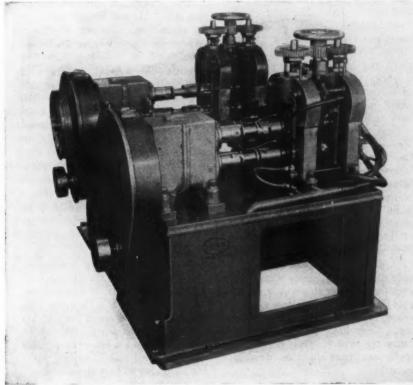
Roller bearings and pinion stands are lubricated with recirculated oil to deliver clear, cool, oil continuously for minimum friction and longer life.

Idling or power driven edgers for use between stands control widths to close tolerances.

Fenn-Standard edgers have been designed to meet the requirements of rigidity so important to holding small tolerances. The edger rolls are mounted in preloaded ball bearings, lubricated for life, and the preloading principle is carried throughout the entire edger.

Ribbon wind and traversing take-up reels are available.

Hydraulic traversing offers the ultimate in flexibility and the drives produce constant tension winding.



Fenn-Standard Tandem Wire Flattening Mill

METAL FORMING NEWS

Rotary Swaging Gains Favor as Faster, Better Way to Shape Metal

Increasing numbers of metal working plants are adopting rotary swaging for tapering, forming, reducing and assembly operations because of large savings in time, labor and materials as well as important improvements in the physical properties of the metal being worked.

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Saves Time and Labor With No Loss of Material

Rotary swaging is a forging process in which tubular or solid bar stock is shaped by means of repeated blows applied by rotating dies. The process develops cylindrical, conical, "necked" and other special shapes with no waste of material.

Most swaging operations require only a few seconds. Even on difficult work, the length of time required is much less than that needed to secure equal results by other processes. So simple to use that highly skilled operators are not required.

Other Important Benefits From Swaging

Like forging, swaging improves the grain structure, hardens the material and gives it increased elasticity and tensile strength. The hammering action imparts a high finish to the surface which in most cases need not be given further treatment. A high degree of accuracy is possible. Close tolerances can be held. Tubular parts often develop enough wall thickness to permit threading.



Plant Replaces 5 Rolling Mills With One Tandem Turks Head, Cuts Costs

The high speed and versatility of tandem Turks Heads has enabled many manufacturers to secure remarkable production economies by using them in place of older style equipment.

One manufacturer has replaced five rolling mills with one tandem Turks Head — at comfortable cost savings and with no loss of productive capacity. Others have been able to reduce costly inventory to a minimum number of finished stock sizes because their Fenn-Standard tandem Turks Heads allow them to fill job lot orders more quickly than ever before.

From round wire to finished shape in one pass through tandem Turks Heads has opened up an efficient, low-cost way to form wire and edge strip stock for increasing numbers of manufacturers.

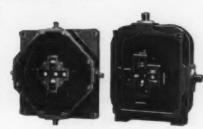
Operation of these machines is fast and simple. The heads can be changed in ten minutes - the work turned out in little time. Fewer sizes of starting rounds are needed - less raw stock is used - waste is cut to the vanishing point - inventory problems are minimized.

Turks Heads Use No Dies

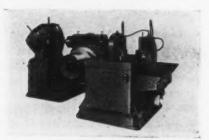
The work is rolled to shape, giving the added benefits of improved metal structure, greater tensile strength, greater accuracy and higher production rates as compared with dies.

For rectangular sections, short runs and light reductions, Fenn-Standard Universal Type Turks Heads are used. For forming rectangles and special shapes, with long runs and heavy reductions, Plain Type Turks Heads are specified. Material is rolled on both vertical and horizontal planes simultaneously. Close tolerances are maintained.

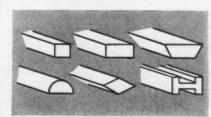
Fenn-Standard Rotary Swagers are available to handle work as small as .015" to .020" diameter, solid bar stock up to 3%" diameter and tubular stock up to 6" diameter. Machines with larger capacities can be designed and built to order.



Left: Plain Type Turks Head. Right: Universal Type Turks Head.



Fenn-Standard Tandem Turks Head. Handles all round wire in size range .40" to 1.250".



Some cross-sectional shapes obtainable with Fenn-Standard Turks Heads.

THE FENN MANUFACTURING COMPANY

1845 Broad Street Hartford 1, Connecticut

Shaping metal for better and stronger products at lower cost

Fenn-Standard Machines Are Sold By:

Chicago Neff Kohlbusch & Bissell

Cleveland Wm. K. Stamets Co.

Detroit

Chas. A. Strelinger Co.

Grand Rapids

Joseph Monahan

Indianapolis
Indianapolis Machinery
& Supply Co.

Los Angeles Hoffman & Heartt

Neff Kohlbusch & Bissell

Minneapolis

Northern Machinery & Supply Co.

Newark

A. C. Cook

New York Indianapolis Machinery

Export Co.

Maxwell Roney, inc.

Pittsburgh Wm. K. Stamets Co.

Providence

Charles Toolin Rochester

Rekers & Roessel

San Francisco C. F. Bulotti Machinery Co.

Seattle

Perine Machinery & Supply Co.

Montreal, Quebec, .

Toronto, Windsor Williams & Wilson, Ltd.



REVIEW OF WORLD MARKETS

Still too early to measure the effects of British devaluation . . . Steelmaking costs increase . . . French wholesale price index declines.

London—It is still early to measure the effect of devaluation on prices and costs in the British economy. Domestic staples have gone up and down slightly without a clear pattern emerging, although some upward trend is still expected.

The movement of import prices may be a better guide. Here the results have been immediate. The index of average import prices rose from 111 in September to 122 in November, the latest month for which figures are available (1947 = 100). Here are price index comparisons for various groups of imports:

BRITISH IMPORT PRICES, 1947=100

	Sept.	Nov.	Pct In- crease
Food, drink and tobacco	108	117	8.3
Raw materials, etc	119	127	6.7
Manufacturers	106	124	17.0
TOTAL	111	122	10.0

Steelmaking Costs Rise

Steelmaking costs in Britain have already increased. Contracts for iron ore are now being negotiated at about 5s. a ton above the prices existing in 1949. The scrap coming from Germany is costing 13s. 6d. a ton more than in September. The price of fuel oil to steelmakers has risen 15s.

6d. a ton. This may increase the cost of a ton of crude steel about 7s. 6d.

The proposed increase in rail-way freights would be likely to add a further 10s. a ton to the cost of heavy steel products and 15s. a ton or more to highly finished products. This would make a general advance in steel prices inevitable.

Costs may well be the factor which decides whether the British steel industry will continue to be able to sell all of its products. At present British prices are relatively low in the world market. This advantage is partly the result of devaluation.

Wholesale Price Index Declines: Retail Prices Stable

Paris—The wholesale price index in France showed a slight decrease in December—from 2005 to 2001 (1938 = 100). Food prices dropped from 1866 to 1851. But industrial products increased from 2144 to 2151. Higher prices for oil products, nickel and silk played an important role in the increase, while tin and leather de-

creased. Retail prices remained fairly stable, although showing some tendency to increase.

Some delay occurred in first trials of the cold reduction mill at Montataire in northern France which was to begin operation Dec. 27. Mechanical parts were damaged in shipment from the United States and had to be replaced by sending six crates by plane.

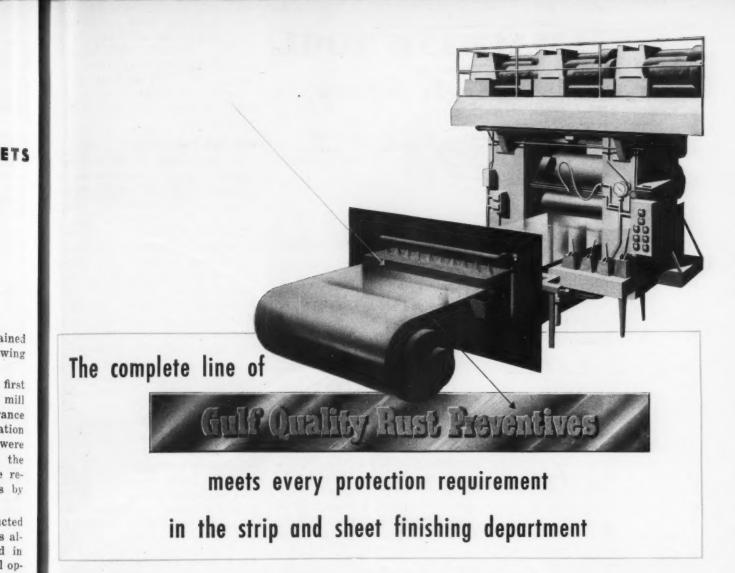
New trials are to be conducted at once. The pickling line has already been tested and found in satisfactory condition. Normal operations are not likely to begin before April. Hot-rolled coils will be imported pending completion of the hot strip mill at Denain.

No Import License Required

San Paulo—A detailed list of merchandise which may be imported into Brazil without license includes a long list of mining and metallurgical equipment.

Chief among these are: (1) Equipment for fragmentation and concentration of ores; (2) Equipment for underground or surface mining, with all accessories; and (3) Equipment for iron and steel mills and metalworking, with accessories and spare parts.

A recent visitor representing an American steel company said that American investors would like to employ larger sums in Brazil, but are discouraged by the restrictions against foreign capital.



Rusting of flat rolled steel products during storage and shipment can be avoided by application of the right rust preventive. But what kind of rust preventive is best? How should it be applied for best results? Can it be removed easily? Can it be left on during forming and drawing operations? Does it stain during annealing?

One of Gulf's rust-preventive specialists can provide effective help on these problems. Years of experience in solving all types of corrosion problems, some of which are bound to be similar to yours, make him a logical source of information and advice. Then too, he has access to the facilities of Gulf's modern research laboratory—he can offer you expert help in the form of specialized study.

When he has studied every aspect of your problem he will recommend the proper Gulf Quality Rust Preventives, and advise you on the most practical methods of surface preparation and application. The completeness of the Gulf line enables him to select the product which gives the best protection against rusting under the conditions encountered, yet can be removed economically.

He will be glad to show you some of the many examples of successful application by the steel industry in connection with flat rolled products and shapes. In every case, surface spoilage due to rusting has been eliminated. Write, wire, or phone your nearest Gulf office today.

Gulf Oil Corporation · Gulf Refining Company

Offices in Principal Cities in 30 States

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Optimism prevails in the machine tool industry . . . Ford ordering equipment for Cincinnati plant . . . LeBlond holds sales conference.

William a. Llayd

Cleveland—A note of optimism, based on a continuing high volume of inquiries and quotations, prevailed in major sales sectors of the machine tool industry this week.

Some big jobs are pending, including the new Ford foundry and engine assembly plant in Cleveland (see below) and qualified sources predict that the machine tool industry will continue the steady upward climb in new order volume and shipments which got under way last November.

Chrysler Activity Continues

In Detroit, Chrysler is continuing to take quotations for its high compression engine program, but there are no present indications that extensive placements have been made. Reports differ as to the location of the new engine plant. Some sources have indicated that new engines will be built at Chrysler's Jefferson plant, although more recent reports indicate possible change to the De-Soto plant on Detroit's west side. It is known that Chrysler plans to move assembly operations on the DeSoto body from Chrysler-Jefferson to the DeSoto plant.

Meanwhile, Ford continues to

order for its new transmission plant at Cincinnati, with reports indicating that much of the equipment will be milling and high speed automatic turning. Also, some interesting developments in die castings are anticipated at the Monroe, Mich., plant.

GM Divisions Quiet

At the moment, most GM divisions are quiet as far as tooling programs are concerned. Tool and die activity in the Detroit area is at very low level at the present time, according to trade reports.

Elsewhere, close observers of the Washington scene hold forth the possibility of some tax reform on accelerated depreciation of machine tools during the present session of Congress. It is known that an industry committee is working with government agencies on this problem.

ECA is planning to bring a Norwegian productivity team to this country to study American methods in the manufacture of diesel engines, hardware and machine tools. The 14-man group, which will be made up of professors, works engineers, and plant personnel, will be in Cleveland Feb. 13.

Outlook for machine tool busi-

ness stemming from government programs is not promising at the moment, although the Atlantic Pact is expected to provide some orders. This will be handled by ECA with a special fund. Tools will be sold by foreign dealers and distributors.

LeBlond Plays Host

In Cincinnati, H. K. LeBlond Machine Tool Co. was host to its domestic distributor organization at a sales conference last week, first in the company's history. About 120 walked into the LeBlond show room for the opening session and found a red school house painted on one of the walls, bearing the legend, "LeBlond District School No. 1." Over the show room door was a sign, "Through these portals pass the luckiest men in the world—LeBlond distributors."

One of several particularly constructive features of the conference was a letter, written to each distributor before the conference opened, asking for ten gripes or complaints. A committee reviewed the results and the complaints were given a thorough airing before the entire group. A better and less expensive way to find out what a company's distributors and customers think would be hard to find.

Ford Plans New Foundry

In Cleveland, Ford Motor Co.'s plans for a \$70 million foundry and engine assembly plant, which is expected to run out an estimated 500,000 automotive parts a day, promise some substantial orders for the machine tool industry. While completion of the plant and the start of production are about 2 years away, plenty of interest attends Ford's possible tooling requirements.

Current optimism of machine tool builders is based partly on new tooling programs which appear to be slated to go through. They are trying to watch the steel industry with one eye and the auto industry with the other in their efforts to anticipate their business climate for the coming year.

Styling of new light consumer products and new appliances has been delayed in some cases, and they expect to pick up some additional gains in this field. ment t the antic some ed by Tools

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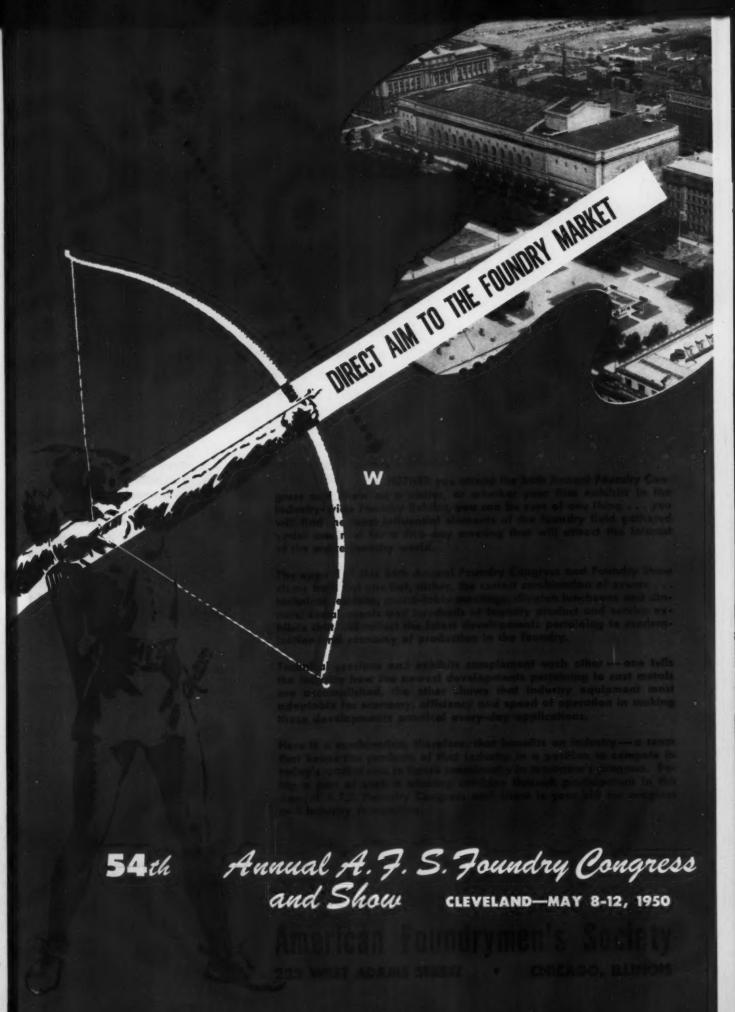
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PUBLICATIONS

Fluid Level Indicators

The Levelimeter line of fluid level indicators for measurement and control of liquid level, interface level, weir level and flume level are presented in 24-p. catalog No. 75. Fischer & Porter Co. For more information, check No. 1 on the postcard.

Production Presses

The convenience of the gap frame press and the width of the double crank type have been combined into the Niagara B line of production presses designed to handle multi-station progressive dies and long irregular sheets and strips of metal, as described in new 16-p. photo-illustrated bulletin. Niagara Machine & Tool Works. For more information, check No. 2 on the postcard.

Stationary Diesels

More than 100 engine specifications showing a range in power from the naturally aspirated 6-cylinder, 175-hp model to the supercharged 8-cylinder, 1500-hp, Superior diesel engine are presented, along with numerous installations of these units in municipal power plants, in new 20-p. bulletin. Superior Engine Div., National Supply Co. For more information, check No. 3 on the postcard.

Technical Data Service

New 48-p catalog contains over 2000 listings of Lefax technical data sheets and books containing about 140 p. of engineering, mechanical or mathematical data in loose-leaf form, which can be car-

New publications that describe money saving equipment and services are available free and without obligation. Copies can be obtained by filling in the attached card and mailing it.

ried in the pocket right on the job. Lefax Publishers. For more information, check No. 4 on the postcard.

Heat Treating Steel

"Heat Treating Republic Alloy Steels," a 56-p. booklet, provides an explanation of various heat-treating methods now generally used, and includes charts showing the mechanical properties obtainable in response to tempering at various temperature levels for 21 types of constructional alloy steels. Republic Steel Corp. For more information, check No. 5 on the postcard.

Concrete Floor Treatment

Flintcrust, a crystalline substance that, when dissolved in water and flushed over new or old concrete floors, penetrates the pores, contacts the free lime and cannot be redissolved, is described in an illustrated folder on lengthening floor life. Flexrock Co. For more information, check No. 6 on postcard.

Tool and Die Steel

Ry-Alloy Ground Flat Stock, an oil hardening tool steel for making dies, jigs, tools, stamps, fixtures and machine parts, is described in a leaflet, which also lists stock sizes and prices. Jos. T. Ryerson & Son, Inc. For more information, check No. 7 on the postcard.

Tapered Steel Poles

Comprehensive information on tapered steel poles up to 40 ft. in height and mountings designed for outdoor lighting of every description is contained in a new 4-p. folder. Union Metal Manufacturing Co. For more information, check No. 8 on the postcard.

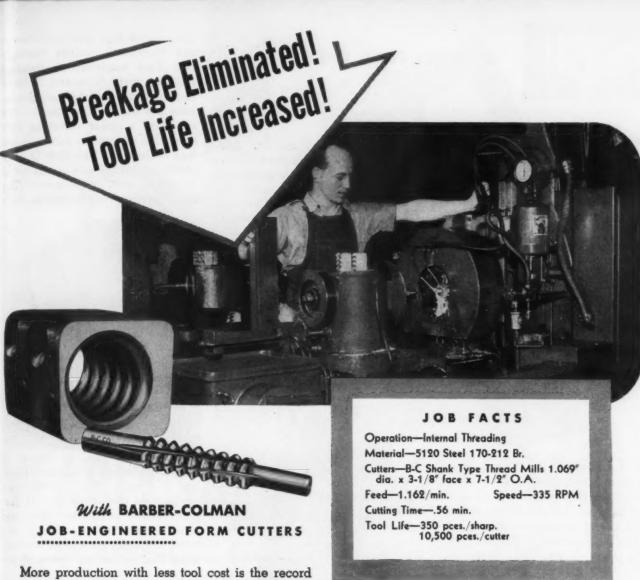
Inclinable Presses

A line of precision production open back inclinable presses, ranging in sizes from capacities of 40 to 200 tons, are described in an illustrated 8-p. bulletin giving specifications, identifying parts lists, and including sectional drawings. Federal Machine and Welder Co. For more information, check No. 9 on the postcard.

D-C Generators

The construction of d-c generators larger than 150 kw, including two and three-wire generators and exciters, both engine and coupled types, are described in new 20-p. illustrated bulletin, "Allis-Chalmers Direct Current Generators." Also included is a discussion of the op-

Turn to Page 113



More production with less tool cost is the record on this job. Small diameter internal threads with special form require a tool with a long cutting face, capable of removing a large amount of metal at high speed. The heavy chip load causes vibration which, on conventional type unsupported thread cutters, results in frequent breakage and poor tool life.

Barber-Colman cutter engineers designed a special tool with extra clearances and an outboard pilot support to steady the cutting action. Now cutting time has been reduced to .56 minutes per

piece and tool life has reached the remarkable level of 10,500 pieces per cutter.

Cutting tools built to fit the specifications of the job always pay off in lower tool costs and lower production costs. That's why we'd like to show you what Barber-Colman Job-Engineered Cutters will do on your next job.

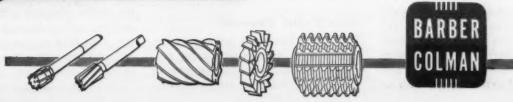


METHODS ENGINEERS!

Get this file of typical performance on standard and special cutting tools. Just send a request on your company letterhead asking for Milling Cutter Data No. 8904

Barber-Colman Company

GENERAL OFFICES AND PLANT, 8884 LOOMIS ST., ROCKFORD, ILLINOIS, U. S. A.



January 26, 1950

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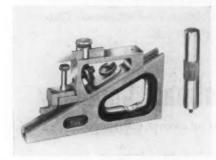
Mitchell polishing lathe. A twosection split spindle is joined by a heavy duty flexible coupling and four-bearing shaft suspension insures perfect spindle alignment at all times. An instant-safety action



foot brake cuts out motor when applied and brakes spindle rotation for instant stopping. Two models take up to 4-in. faced wheels and the third handles 6-in. faced wheels. Frederic B. Stevens Inc. For more information, check No. 23 on the postcard on p. 35.

Precision Gage

A quick easy adjustment of the knurled thumb screw sets this new universal precision gage smoothly and precisely to the exact size required, either from a micrometer, height gage, vernier caliper or gage



blocks. With a scribing attachment it can be used as a surface or height gage. An offset attachment permits settings in narrow areas or working $\frac{1}{8}$ in. below the base line. The 3-in. knurled extension provides an

increased range of 9½ in. The gage is built to the highest standards of accuracy. Basic parts are made from steel forgings. L. S. Starret Co. For more information, check No. 24 on the postcard on p. 35.

Milling Machine

Machining nickel-moly forgings has become a real production job with the new Kent-Owens 2-20 horizontal milling machine that has special tooling and mechanism. The machine illustrated mills cutters for oil well drills. With its special fixture the operator merely places



the part in position and engages the table feed. The table with the part on it makes a rapid advance to the milling cutter, the quill feeds to the proper depth and the table automatically goes into direct feed. After the milling of one tooth is completed, the table reverses and returns to starting position. The fixture automatically indexes and the cycle is repeated until the last tooth is milled. The fixture can be adjusted to mill either straight or spiral teeth. Kent-Owens Machine Co. For more information, check No. 25 on the postcard on p. 35.

One Point Presses

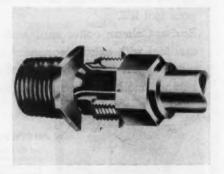
New enclosed one point presses of 500 tons capacity and larger require less headroom and feature a box type crown, long, fully enclosed slide barrel type slide adjustment and Meehanite castings throughout. Less headroom is required since the main drive unit is lower and the clutch and flywheel assemblies are outside the crown. The slide has a power elevating unit consisting of a worm driven barrel type connection. The slide is completely within the gibs at any point of stroke and adjustment. The main drive is fully eccentric, hav-



ing a twin drive for balanced loading. A cascade oil lubricating system is used throughout except for the gibways and roller bearings, which are grease lubricated. E. W. Bliss Co. For more information, check No. 26 on the postcard on p. 35.

Aluminum Fitting

A new all-aluminum fitting for use with annealed aluminum tubing 3/16 through ½ in. OD is a self-contained, two-piece fitting, with a



self-flaring feature. The body of the fitting contains a flaring cone, and the nut contains a thrust collar. One turn of the nut, with an ordinary wrench, is sufficient to shear off the collar, and further

Turn to Page 114



To pickle and anneal the body of their new coffee pot was costing Landers, Frary & Clark, makers of the famous line of Universal appliances, \$7.50 per M pieces. 5 anneals, which at first seemed necessary to produce the quality product for which Universal is nationally known, jumped the cost per M pieces to \$37.50. Universal knew this was far too high and decided to do something about it.

Their metallurgist, in cooperation with Revere, studied the problem in detail and then proved their conclusions by exhaustive tests. It was found that by using Revere copper strip in a certain temper, 4 anneals could be eliminated. Now, after a draw of 73/4", the copper body is annealed once then spun into its finished shape. Based on current production, this has resulted in a saving of over \$10,000.00 per year, plus an improved product. Additional savings also are realized through more simplified handling, and more economical finishing operations due to the reduction in the number of anneals.

To make such a deep draw while holding rejects to the absolute minimum would not be possible were it not for the fine quality and consistent uniformity of the gauge and temper

of the copper used. The copper body is tin plated inside, while the outside is first nickel plated then chromium plated.

Because of the nature of this appliance, which makes coffee automatically to the individual's taste, then reduces the current to keep coffee at serving temperature, Revere copper was selected for its high thermal-conductivity. This makes it possible to brew the coffee faster and keep it hot longer, thus saving on current.

Perhaps Revere Copper or some other Revere Metal can be of help in developing or improving your product—cutting your production costs. Why not tell Revere about your metal problems? Call the Revere Sales Office nearest you today.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.

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On the ASSEMBLY LINE

AUTOMOTIVE NEWS AND OPINIONS

GM will break all previous attendance records at its huge 1950 Waldorf show . . . Sloan discusses profits and the light car . . . 1950 Cadillacs have new stone quards.



Water & Potton

New York-General Motors' second postwar show held here at the Waldorf has demonstrated again that the interest of John Q. Public in automobiles-and more particularly GM-designed and built automobiles - is insatiable. Starting with the preview, the ballroom and adjoining rooms at the Waldorf have been bulging with humanity trying to get a peek at the latest GM cars. Last year's attendance record of more than 300,000 seems certain to fall, the only limiting factor being the capacity of the Waldorf to handle the crowds.

Show Given Publicity

The New York show is being reported this year by approximately 300 members of the press. The show was televised nationally by Arthur Godfrey. The newsreels have been active. It is a fair assumption that 100 million people

will have had a hard time trying to avoid notice that GM was holding its annual car extravaganza here in New York.

At a luncheon preceding the show, Alfred P. Sloan, Jr., chairman of GM, was host to 300 top U. S. industrialists. Mr. Sloan gave his guests an accounting of GM's 1949 operations, calling attention to the fact that it has taken the industry 20 years to surpass the 1929 production record. In his talk, Mr. Sloan emphasized the fact that the increased size of the postwar cars, their added luxury and more complete mechanization has greatly increased the demand per car for raw materials. It has also accounted for a much larger utilization of labor per car both directly or indirectly, he said.

Sloan Discusses Competition

Explaining why GM is currently producing two different types of transmission, Mr. Sloan said this was entirely the result of the GM policy of permitting each division to solve its engineering problems in its own way.

"We operate a free competitive economy within ourselves," Mr. Sloan said. "Our competition is one division against another, as well as against firms on the outside." It seems clear from Mr. Sloan's remarks that any change in the transmission plants of the GM divisions, if they come about,

will be based on decisions by the divisions themselves rather than as a result of a decision by top management.

In his address, Mr. Sloan repeated an earlier statement that for the present GM has no interest in building a light car.

"The matter of the small car presents no technical difficulties of design or production," he said. "It is a matter of commercial policy. The problem is to develop a car that will have reasonable consumer appeal at a price differential sufficiently great, as compared with the existing product, to insure acceptance. I personally believe that through the process of evolution, our industry has reached a car type in the low price range that insures maximum mass acceptance."

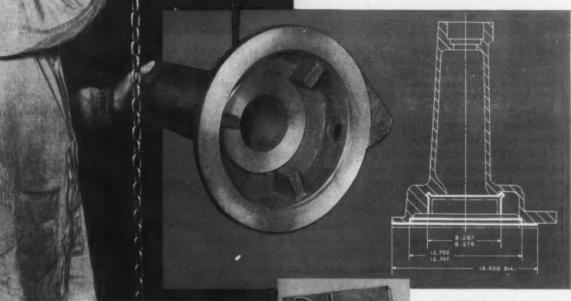
Diesel Engines Forge Ahead

Mr. Sloan also told his audience about the new 5500 Allison turboprop engine which has the amazing power delivery of 2 hp per lb of weight. He called attention to the fact that in the short span of 15 years GM's production of diesel engines has obsoleted the steam locomotive. An interesting commentary on the GM diesel development is that while the diesel sells for twice as much as a steam locomotive, its greater availability and lower operating costs has made it impossible for the railroads to ignore the diesel challenge.





housing problem



REAR axle housing, that is. Note the size...the 45° angular recess...the number of operations (12) for rough and precision-finish boring, spading, chamfering, facing...

This class of work is a natural for the P&J Automatic; with this Machine tooled the P&J way, you have a most efficient setup for today's high-speed, close-tolerance requirements. When next you figure on the precision-production of quantity duplicate parts, give consideration to P&J's specialized knowhow—and the profitable combination of P&J Tooling on P&J Automatics.

The P&J Tooling, to produce the work illustrated, was set up on the 6DRELX, one of the 6D series of P&J Automatics described in this Bulletin. Write for your copy. It may also pay to get a P&J estimate on your prints or sample parts. Either way, there's ne obligation.

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GM AUTO SHOW: Top General Motors executives put in a lot of time planning the "Mid-Century Motorama" which ends this week at the Waldorf-Astoria in New York City. Here, viewing a model of the arrangement in Waldorf's grand ballroom, are Harley Earl (left), vice-president in charge of styling, and W. F. Hufstader, vice-president in charge of distribution.

Indulging in some interesting engineering-economics, Mr. Sloan pointed out that after allowance has been made for the fact that we are now dealing with a 60 cent dollar, GM's \$600 million profits in 1949 are no greater than the 1936 profits. Based on return on capital, the 1949 GM return was about 3 percentage points higher than the 1936 return, he said.

Cadillac Introduces Its '50 Line of Cars; Changes Made

Last week Cadillac announced its 1950 line of cars. All models are lower—some by as much as 4 in. Road clearance is unchanged. Interior headroom has been maintained on all lines and in some models it has been increased.

The bumper, lower hood, front fender and front grille are restyled. The tailfin on the rear fender is continued.

Engineering Changes Made

The broad, single piece curved windshield is larger and broader. The roof has been stiffened by the use of new box-type girder construction.

The rear seat has been moved forward. This increases hip room

and has some favorable effects on riding qualities.

Some engineering changes have been made in the front and rear wheel suspension. Compression ratio remains at $7\frac{1}{2}$ to 1.

The outstanding styling feature from an appearance standpoint is the new vertical "grille-type" stone guard appearing at the forward edge of the rear fenders. There have been some engine refinements designed to give improved performance and increased fuel economy. Cadillac engineers claim the 1949 high compression engine is giving

car owners 15 to 20 pct better fuel economy than the 1948 powerplant. The 1950 engine, it is claimed, will give another 5 to 10 pct improvement in fuel economy.

Some minor changes have been made in Cadillac's Hydra-Matic transmission which is now standard on all 1950 Series 62 and Series 60 Special models. Hydra-Matic remains optional equipment on Series 61 and 75 models. Automatic transmissions are now installed on more than 98 pct of all Cadillacs bought by new car owners.

Simultaneously with the announcement of its new models Cadillac announces a decrease in prices ranging from \$30 on the Series 62 group to \$211 on the Series 60 special sedan. This includes the November decrease in the price of the Hydra-Matic transmission.

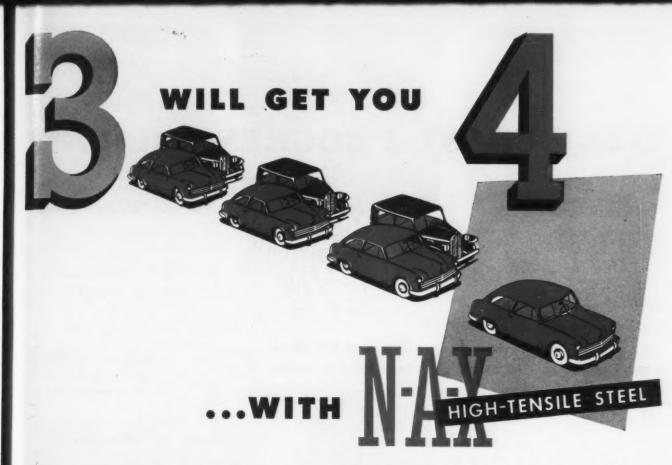
C-F Bars Are Next After Sheets on Detroit Scarcity List

Regular mill supplies plus some conversion tonnage will apparently see the automakers through January. One auto plant is actually building inventory. Carbon bars are next after cold-rolled sheets on the scarcity list with cold drawn pressure tighter than hot-rolled. Greatest cold-rolled sheet pressure is in 16-gage.

Alloy bars are coming in on time. There are some cold-rolled sheets here in warehouses but not much wide material is available.



CADILLAC FOR 1950: Cadillac Series 62 sedan reveals the 1950 flowing design in full proportion. A full 5 in. increase in body length permits relocation of the rear seat well forward of the wheel housings. Repositioning of this seat and moving arm rests to the doors allows greatly increased hip room on the rear seat. Hydra-Matic transmission is standard equipment on all Series 62 models for 1950.





GREAT LAKES STEEL

Corporation

N-A-X Alloy Division, Ecorse, Detroit 29, Mich. UNIT OF NATIONAL STEEL CORPORATION

It's a fact. It's demonstrated every day, in the production of varied parts and products. Three tons of N-A-X HIGH-TENSILE steel are yielding as many finished units as were yielded formerly by four tons of carbon sheet steel!

This "new arithmetic in steel" is in step with industry's trend to the use of improved steels. When cold-rolled steel was found to be preferable to hot-rolled for many uses, industry substituted cold-rolled for hot in these uses. Today, it is equally logical and economical to replace simple carbon sheets with low-alloy high-tensile.

N-A-X HIGH-TENSILE makes it possible to reduce sections by 25%... and still provide greater strength and durability than can be obtained with thicker sections of mild-carbon steel! Each ton of N-A-X HIGH-TENSILE steel represents a potential 33% increase in finished goods. Manufacturers are finding that N-A-X HIGH-TENSILE enables them to get 33% greater usefulness out of steel supplies.

Investigate this great opportunity to make each ton of sheet steel go farther...through the superior quality of N-A-X HIGH-TENSILE.

January 26, 1950

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WEST COAST PROGRESS REPORT



Digest of Far West Industrial Activity



J. Geinhardt

Thirteen producers sued for triple damages as result of inability of Texas fabricator to get steel . . . Foundries in L.A. face smog deadline.

San Francisco—Once more a David has arisen to challenge the Goliaths of the steel industry.

In a suit filed in Federal Court here last week asking triple damages under the Sherman anti-trust laws, Aero Sales Co. and the Texas Tank Co., of Houston, allege that through conspiracy and monopoly 13 steel producers and 13 "co-conspirators" named in the suit damaged the plaintiffs to the extent of \$1,505,500. The plaintiff companies are owned by the partnership of Walter P. Thomson and wife, now residents of Los Angeles.

Organized as a Warehouse

Aero Sales Co. was organized as a tubing, pipe and sheet warehouse in December, 1944, in Dallas and was moved to Houston in March, 1947. Mr. Thomson was general partner and managing partner in 1943 to 1945 in the Aircraft Foundry & Pattern Co. of Dallas. The Aero Reclamation Co. was organized in 1943. The Texas Tank Co. registered in 1945 as a tradename and successor to Aero Reclamation Co. and claims it was ready for the production of butane

and propane tanks in April of 1946.

According to the complaint the National Hydro-Gas Co., in which L. C. Crutchfield and T. A. Gaston were partners, was employed to sell tanks. It is stated that orders for \$317,700 worth of tanks were secured in 1½ months in 1946 and that additional orders were refused because of the unavailability of steel.

It is alleged by the plaintiff that strenuous efforts were made to secure steel from the following companies without success: Columbia Steel of San Francisco, Armco Steel Corp. of Ohio, Sheffield Steel Corp. of Kansas City, Mo.; Bethlehem Steel Corp. of

New York, Bethlehem Steel Co. of Bethlehem, Pa.; Granite City Steel Co. of Granite City, Ill.; Jones & Laughlin Steel Corp. of Pittsburgh, Pa.; Lukens Steel Co. of Coatesville, Pa.; National Steel Corp. of Wilmington, Del.; Republic Steel Corp. of Hoboken, N. J.; Worth Steel Co. of Claymont, Del.; Inland Steel Co. of Chicago, and U. S. Steel Corp., Hoboken, N. J.

ANO

Names 13 Co-Conspirators

In addition to the above the following companies are named as co-conspirators: Tennessee Coal, Iron & R.R. Co.; Carnegie-Illinois Steel Corp.; Geneva Steel Co.; National Tube Co.; Youngstown Sheet & Tube Co.; Alan Wood Steel Co.; Pittsburgh Steel Co.; National Supply Co.; Armco Drainage & Metal Products, Inc.; Jones & Laughlin Steel Products Co.; National Steel Products Co.; Joseph T. Ryerson & Son, Inc.; and Inland Steel Products Co.

Kaiser Steel Corp., also a producer of mild steel plate which was sought by the plaintiff, is conspicuous by its absence.

The complaint lists in considerable detail the efforts of Mr. Thomson to secure plate from the date of organizing his company to the present time. It also reports that for the year ending Dec. 31, 1946, the Texas Tank Co. made sales of \$90,000 and realized a net loss of \$43,000. For the year ending Dec. 31, 1947, gross sales totaled \$61,000, the greater part of which included plant equipment and the company realized a net loss of \$18,800 from operations and a capital gain of \$6750 on sales of equipment. For the year ending Dec. 31, 1948, gross sales



1621—Glass was money! America's first glass factory was actually a mint—not for the manufacture of coins but to make glass beads for use as money when buying land, food and furs from the Indians.



2 1827—Blown glass was the rule until Enoch Robinson, a carpenter, figured glass could be pressed into shape . . , the glass pressing machine was born. Electricity to power new machines was still to come.



3 1899—Owens invented a machine to make bottles as the machine age arrived in glass. By 1915, Howell "Red Band" Motors were making important contributions to this and other industries.

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4 Today—Modern, electrically driven machines have improved quality, cut costs and increased output in the glass making industry. For example, this unique glass beveling machine, equipped with 7 dynamically balanced Howell Motors, automatically bevels glass at the rate of 2,000 inches per hour! You'll also find precision-built Howell Industrial Type Motors powering bottle and bulb machines, conveyors, grinders, polishers, plate and window machines in the glass industry. Elsewhere, Howell's wide range of standard NEMA motors, and special motors designed to customer requirements, serve dependably and efficiently under the toughest conditions.

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HOWELL MOTORS

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were \$11,800 and the company realized a net loss from operations of \$6500. For the first 6 months of 1949 the complaint states that no sales were made and the company sustained a net loss of \$9000.

Complaint Lists Special "Deals"

The basis for the suit is that the defendants allegedly refused to sell the necessary steel to the Texas Co. to enable it to manufacture the tanks which they were set up to produce. It is alleged that repeatedly the plaintiff met with refusals on the basis that the steel producers were confining deliveries to historical customers and that because of the limited production they were unable to accept new business.

A number of specific instances of such refusals and special "deals" are cited in the complaint. Among these is the report that, when approached in 1946 for mild steel plates, F. C. Buck, district sales manager at Houston for TCI&RR, offered to supply these mild steel plates if the Texas Co. would purchase "large quantities of stainless steel plate." It is also alleged that in June, 1946, the Sheffield Steel Corp., subsidiary of Armco Steel Corp., offered the Texas Co. 450 tons of steel plate per month if the Texas Co. would purchase 20,000 15-in. diam flanged and dished heads per month at a cost of \$2.00 each. The complaint states that the offer was made by R. H. Startzell, sales manager for Sheffield, and was refused because it "involved an expenditure of capital and risk beyond means of the company."

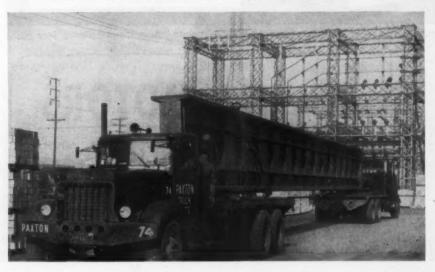
Cites Possible Profit

Texas Co. at capacity operations was prepared to make 24 500-gal tanks per day or 36 250-gal tanks per day and thus realize a net profit of \$24,000 per month during the period between Apr. 1, 1946, and the present time according to the complaint. It is alleged that the company was, because of its inability to obtain steel, prevented making a net profit of \$100,000 per year for the years beginning Jan. 1, 1946, up until the present time.

The complaint goes on to cite three other causes of action including the charge that the use of a multiple basing point system encouraged monopolistic tendencies on the part of the steel producers.

Progress and results of this suit will be watched with considerable interest by all steel producers who, during the years of scarcity, have been beseiged by new fabricators seeking steel.

WESTERN STEEL: Shown is an 80-ft fabricated steel crane girder for Bethlehem Pacific's new 75-ton electric furnace and pit building. The girder weighs 50 tons and has a depth of more than 6 ft. The electrical transformer station shown in the background is now being used exclusively by the plant's 50 ton electric furnace which was installed in 1948. Provision has been made for additional transformers for the new furnace for which foundation construction is presently underway.



L. A. Foundries Face Smog Deadline; One Contract Signed

Los Angeles—Both industrialists and the public were watching as gray iron foundries approached their deadline of Jan. 27 for the signing of contracts for equipment to combat air pollution.

The deadline was given 31 of the more than 60 foundries in Los Angeles County by the County Air Pollution Board. The rest of the foundries have been given later deadlines. The order called for proof of signed contracts by that time.

As THE IRON AGE went to press, it appeared likely that none of the foundries would have signed contracts by time of the deadline. They have been working feverishly on testing all possible equipment, however, and it appeared likely that the county air pollution director, Gordon Larson, would ask the hearing board to grant an extension of time.

Situation Proves Ticklish

The situation is ticklish, however, with public pressure for immediate controls on the one side and with the foundries claiming that no equipment has been found yet which has been proved able to meet the tests.

Refusing to commit themselves in advance publicly, air pollution officials hinted, however, that they might favor a "workable plan" in lieu of signed contracts. They said there were three possible solutions, a closed top cupola, such as described in The Iron Age, Apr. 7, 1949, a baghouse with a wet scrubber or an electrical precipitator.

The air pollution control board has the choice of extending the deadline, revoking a permit required to operate any equipment in the county which emits smoke, refuse to extend variances granted or seek further evidence.

What would happen if the board revoked the permits for at least half of an industry remains to be seen. Legal action testing the entire law might follow. You can make them better with COLD-FINISHED

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THE FEDERAL VIEW

THIS WEEK IN WASHINGTON

Denham accuses NLRB members as being prejudiced against the T-H Act . . . Congress considering extension of the draft law . . . Machine tool industry off to a good start.



Eugene J. Harly

Washington—The sweeping indictment of members of the National Labor Relations Board by NLRB general counsel Robert Denham, who accused them of political administration of the Taft-Hartley Act, has done little to advance the cause of impartial and nonpolitical handling of labor-management relations.

Mr. Denham's public speech was not news, for the rupture between the members of the board, three of whom were schooled in the philosophy of the Wagner Act, and Mr. Denham, who as general counsel was made independent of the board by the Taft-Hartley Act, has been an open secret for more than a year. Labor experts feel that Mr. Denham's indiscriminate attack has made his already difficult job even more so, and has not helped to make for better relations with the White House, Congress, and the courts.

Accuses Board Members

It is felt that Mr. Denham would have been more effective if he had used a sword instead of a shotgun in his pillorying of the board members. Instead, he swept all four board members into the same category, accusing them of outspoken prejudice against the T-H Act and allowing their administration of the act to be influenced by their alleged belief that it would still be renealed.

Actually, the present membership of the NLRB lines up something like this:

Chairman Paul M. Herzog—Mr. Denham's characterization fits the chairman, who is sometimes regarded as "the Machiavelli of the board." He has found time to play both sides of the street, but is now clearly on the White House side of the labor picture.

Board Members Analyzed

John M. Houston—Mr. Denham was probably right in this case also. Mr. Houston has made no secret of his hostility toward the T-H Act. Those who say that more businessmen are needed in government should take a look at Mr. Houston's record

James J. Reynolds, Jr.—This board member is fair and has tried to be conscientious, and is probably the only completely judicially-minded man on the board.

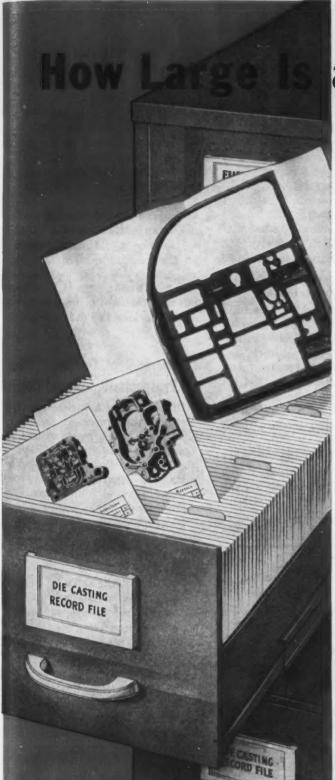
Abe Murdock-The only member

of the board appointed after the T-H Act became law, Mr. Murdock has tried hard to be impartial and has kept an open mind despite his consistent pro-labor record while serving in Congress.

Not an Impartial Prosecutor

At the White House, Mr. Denham's attack obviously did not sit well with President Truman, since he has often expressed his disapproval of the airing of dirty linen in public. Admittedly, while there is not much that can be done to change Mr. Truman's mind regarding the T-H Act, this outburst slammed the door to any probability that Mr. Truman might have appointed a conservative to fill the vacancy on the five-man NLRB. The appointment will probably be dictated by Chairman Herzog, and will be a man whose thinking parallels his own.

In Congress, it cannot be forgotten that Senator Taft's suggested amendments to the act bearing his name would have abolished the independent status of the general counsel's office as it now exists and return it to the board as a creature of that agency. As the law now



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January 26, 1950

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stands, the general counsel now files complaints and acts as prosecutor, while the board decides the cases in a quasi-judicial manner. Under the old set-up the board acted as complainant, prosecutor, and judge.

It is also felt that Mr. Denham has diluted his effectiveness as general counsel in cases where he has to appear before the courts and request injunctions, for he has put himself almost squarely in a position of being anti-union, rather than an impartial prosecutor of both labor and management.

Congress Considers Request For Extension of the Draft Law

Congress is giving careful thought to President Truman's request for a 3-year extension of the draft law, including White House authority to allocate a portion of the nation's steel output. Whether Mr. Truman will get all or even part of what he wants is very doubtful.

The present draft act, which expires on June 30, authorizes the rationing of steel output to provide

small business with a "fair share" of steel needed to complete military orders for supplies and equipment.

However, this authority was never used. During the period of the acute steel shortage in 1948, Mr. Truman explained that he would not invoke this provision, but, instead ordered the Commerce Dept. to assure adequate supplies of steel through the now-defunct voluntary allocations program.

There is only a limited possibility that the allocation authority will ever be used except in cases of emergency.

Seeking 3-Year Extension

"The country would have to be in a pretty serious situation before the Defense Dept. used the steel-rationing provision," one military procurement official told THE IRON AGE. This official added that he "did not foresee the time" when the rationing power would be invoked, "short of war or an equally serious national emergency."

President Truman and Secretary of Defense Johnson are seeking the extension of the present law to June 30, 1953. Whether or not the Congress will extend the act for the full 3-year period remains problematical, however.

There is considerable talk in cloakroom circles that the law may be allowed to expire at the end of June. On the other hand, a 1- or 2-year extension of the present law would not be unlikely, particularly if the House amends the present law to suspend the induction of personnel for an indefinite period. This latter solution would permit members of Congress to explain that they voted for a necessary defense measure, and at the same time to point out that "none of your boys will be drafted as long as I'm in office."

Commerce Dept. Optimistic Over '50 Prospects: Downtrend Halted

Off to a good start with increased first quarter orders, it should be good news to the machine tool industry that the Commerce Dept. is highly optimistic over 1950 prospects. The department believes the downward trend which has been continuous since the war, has been halted—that production will rise as much as 20 pct in 1950 and more than offset the 14 pct decline last year.

Specifically, the Office of Domestic Commerce estimates that 1950 orders will result in a \$50 million increase in production over the next 12 months. This would mean a total of \$300 million as against about \$248 in 1949.

This optimistic estimate is based on both fact and assumption. For one thing, reports to the department showed that increasing orders during the last quarter were continuing into the 1950 first quarter. Orders postponed during the steel strike and automotive retooling were seen as major factors.

Plan to Buy More Tools

Emphasis is also placed on a survey by the ASTE (American Society of Tool Engineers) as to future plans of industry as a whole. About 45 pct of the firms reporting indicated plans to buy more tools

THE BULL OF THE WOODS

By J. R. Williams



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JACKSON 18, MICH., 601 Reyunlds Bldg., JACKSON 5-3298. NEW YORK 19, N. Y., 259 West 57th St., Columbus 5-4870 ST., LOUIS 8, MO., 4653 Lindell Bldg., LUESS 4550 TOLEDO 4, OHIO, 2114 Ohio Bldg., GArfield 4364



Floor Plate • Billets • Plates • Sheets • Strip • (Alloy and Special Grades)

The Federal View

than last year while another 35 pct said they intended ordering at least as much. The larger firms generally indicated increased buying.

Tool builders are advised not to overlook the export market, which is rated high in importance by the Commerce Dept. Partly with the aid of the Marshall Plan, 1949 export shipments accounted for about 25 pct of tool business, and the department sees increased imports from other countries, providing more dollars and offsetting the effect of devaluation. In addition somewhere between \$75 and \$100 million is expected to be spent for machine tools and machinery for the military aid program. Additional tooling for production of military equipment in this country will also be needed.

The Commerce Dept. does not go past this year in its estimate of the situation. But it does imply that the automotive industry may be an increasing factor in future business.

It sees enough orders on hand to keep auto production for the first 6 months at the 1949 rate but it expects a decline for the last half. Competition is then expected to rule the market with greater attention focused upon new designs and improvements—with a resultant effect on the tooling industry.

Labor Dept. Preparing Order Limiting Employment of Minors

Washington — An order is in preparation by the Labor Dept. which will forbid employment of persons under 18 in the operation of varied power metalworking machines. No hearings will be held but objections may be filed with the department.

A second order in preparation is an amendment to a previous order (No. 7) which would prohibit minors under 18 from employment on manlifts—powered platforms operating vertically through holes in floors.

Machines declared hazardous under the proposed new Order No. 8 include rolls for reducing or bending metal, all punching and pressing machines, power and drop hammers, and all shears for cutting metals.

HOUSING

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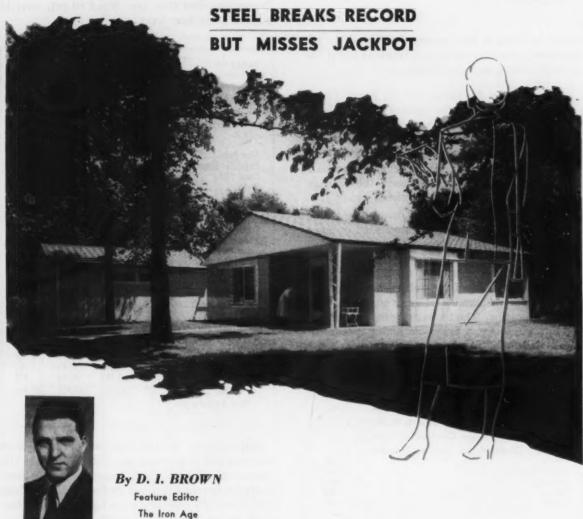
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RESIDENTIAL building hit an all-time high last year when over one million units were started. This year may also be the determining year of how big will be steel's share in the largest potential market in sight. In addition, the entire metalworking and equipment industry has a large undeveloped market at stake and this year can well decide their participation in this new field.

In 1949 the steel industry broke all records in shipment of steel for home construction. The use of steel in house construction is growing. Present applications, however, are limited and chances to substantially improve steel's participation in conventional home construction. in the immediate future, are not too bright. The real steel jackpot, the all-steel house, has not yet materialized. The success of an all-steel house is highly questionable, but if steel homes ever had a chance to succeed, now is the time.

If and when steel becomes of age in the housing field, it will not be the painted steel house or steel frame only projects of the past. Rather, it will be major steel tonnage applications via *Porcelain Architecture*, which appears to be the most likely key to the most elusive, undeveloped steel market in sight today.

Metal is now a universally accepted building material, but of restricted scope in the construction of homes. It started with the nail and worked itself in by way of rainspouts, bathtubs, plumbing, conduit, supporting beams and columns, etc. Women had little to do with these applications of metal. However, large tonnages now end up in the American homes via appliances, laundry equipment, etc., and the further acceptance of more metal in the home appears to be up to the little woman. She is sold on gleaming white refrigerators, stoves, steel blinds, etc. Nobody has to spend their money to convince her of the



Continued

beauty of steel in her present-day home. As yet she hasn't even started serious thinking about the all-steel house. But she might.

Steel's Participation So Far

Steel tonnages into the ordinary conventional home are peanuts compared with all-steel construction. The use and application of metalworking equipment and processes and, therefore, the sales volume of such machinery and materials used in making steel homes dwarf the tonnage into hammers and saws and trowels, etc.

In 1948 a nationwide survey was made in the effort to obtain the pounds of steel used in home construction per unit. These data shown in Table I represent a composite of all types of plans and designs and all phases of home construction. The figures were carefully weighted to take into consideration the number of units constructed by type and location. The tonnage figure of approximately 2835 lb for a five room house appears to be the most reliable of recent estimates.

TABLE I WHERE STEEL GOES Composite Weights of Steel in Typical Five Room House Construction—1948 (Steel only, no cast iron included)

Structu	1	e																				۰																					166
Plumbii																																											51
Heating)									0	0									, ,			, ,								, ,			0	0		9			0	0		431
Electric	C	,	0	0		0	0	0																0			٠			0	0		٥	0	0	0		0	0			0	9
Garage		,		0										0	۰	0			0	0	0				0	0	۰		۰		0	0	0	0	0	0		0				0	6
Porch				0	0		0						0	0	0	0	۰	0	0	0	0	0	۰			۰	0	•		0		0		0	0	0	0	٠				0	6
																																											283

Above weights do not include appliances which are not generally included in the price of a home.

FHA in 1941 analyzed the types of materials used in typical construction of that time in a special survey. Results of this nationwide survey are summarized in Table II. Although this report does not estimate the pounds of metal used in the various items, it shows the popularity of metal for certain applications.

Building experts indicate that steel windows today are still only used in about 10 pct of ordinary single family dwellings. In large housing projects, however, steel windows are often used exclusively. Metal lath is not at all typical in ordinary construction nor are steel doors, frames, sills and steel floor joists.

Statistics of this nature are difficult to get and

even the breakdown on the number of aluminum versus wood versus steel windows in home construction for 1949 is not available. Percentage estimates are available, however, which show that the use of aluminum windows is growing but it is still a very minor item compared to steel windows. Percentage-wise they are: Wood 80 pct, steel 15 pct, and aluminum 5 pct.

TABLE III

STEEL'S RECORD

Shipments of Steel Products for Housing
All grades including carbon, alloy and stainless, net
tons, based on AISI Form AIS 16, Code 170

	1946	1947	1948	1949*
Wire Rods	350	297	184	335
Structural Shapes	45,477	56,326	21,194	16,741
Sheet Piling	273	1,378	2,373	2,030
Plates	6,016	12,191	10,733	3,976
Hot Rolled Bars	7,096	7,007	10,364	4,511
Cold Finished Bars	84	80	713	163
Cold Rolled Bars	12,502	21,458	22,514	34,712
Standard Pipe	609	1.304	863	561
Mechanical Tubing	71	92	1,920	1,486
Drawn Wire	706	462	12,464	847
Nails and Staples	2.059	1,113	1,468	713
Wire Fence	12	26	211	261
Hand Dipped Tinplate.	4	-	16	464
Hot Rolled Sheets	3,304	13,587	12,302	5.914
Cold Rolled Sheets	6,236	4.922	17,816	22,614
Hand Dipped Gal-	-,	.,	,	,,
vanized Sheets	2,519	7,216	4,254	684
Electric Galvanized	2,011	1,210	1,201	•••
Sheets	_	_	1,886	505
Hot Rolled Strip	2,859	1,717	12,673	10,876
Cold Rolled Strip	495	2,398	5,582	1,552
All Other	3,138	1,681		350
Total	93,810	133,255	144,738	109,345
*First 8 months only				

Shipments of steel by net ton per steel item over the last four years are listed in Table III. These data are taken from American Iron & Steel Institute figures published in form AIS 16, Code 170. Code 170 represents the total tonnage classified under residential construction, including maintenance. Thus all of the tonnage shown in Table III was not for new home construction in any one of the years listed. Americans spent almost as much for modernization and repair of old homes last year as they did to build new ones. This little fact appears to be overlooked in some of the enthusiastic prognostications of the number of homes to be built in coming years as well as the amount of steel that went into each new unit.

The table shows that by item shapes, cold rolled bars and cold rolled sheets were the important tonnages in residential applications. AISI reports break these tonnages down further by type of steel but carbon steel is by far predominant in all items. The records for last year include only the first eight months' shipments. October shipments were nil because of the steel strike, but September, November and December were heavy. It appears reasonable to assume that last year's tonnage will be close to 200,000 net tons when all the figures eventually become available.

WHAT ARE HOUSES MADE OF

FHA Analysis of Components of Construction—a
Partial list of Applications

	Po	artial list	of Applications	
For houses distributed according to designaterials on a national basis. The percentauting the material are listed under each co	ige of houses		TUB SHOWER Per 1000	Total Pct
	Pct of Use	Total	Included 55.	
	Per 1000	Pct	No tub shower	100.00
BASEMENT GIRDERS		9	LAUNDRY TRAYS	100.00
Foll basement	.5	-	WATER PIPES	11
Steel	18.8	95.0	Galvanites stel	1
Partial and no basement	10.0	200	Wrought iron	1
Wood	45.0	45.0	Copper	
		100.00	Brass	100.00
BASEMENT COLUMNS			SOIL PIPE UNDER BASEMENT	100.00
Full basement Wood	19.9		Cast tren 95.7	
Steel			Torra cotta	
Masonry		55.0		100.30
Partial basement			STORAGE TANKS	
Wood		/	Galvarized steel 82.2	
Masonry		14.2	Copper	
No basement		//	No tanks	
Masonry piers	30.8	39.8		100.00
BASEMENT WINDOWS	/	100.00	HEATING	
Wood	24.2		Warm air Gravity Ayre furnace	
Steel	40.0		Steel 2	
No wiedows	30.8	100.00	Cast/iron 21.3	23.5
W WANTE DAVE DESCRIPTION			FORCE AIR FURNACE	
WINDOWS ABOVE BASEMENT			Steel	100
Wood	91.3		Pipeless furnace 0.7	14.0
	0./	100.00	Floor furnace	1
GUTTERS & DOWNSPOUTS			Space heater 10.0	
Galvarized steel	. 60.6	,	Stoves 2.2	34.5
Copper	. 6.7	/	HOT WATER	
Wood with copper downspouls		//	Gravity type	
No guiters or lownspoots	26.0	100:50	Steel pipe 7.1	7.4
LATH & PLASIER		77	Wrought iron pipe 0.3	7.4
Metal lath	. 1.3		Steel pipe 3.0	
Wood lath	33.1	77	Wronght iron pipe 0.2	
Sheet lath		11	Copper pipe 1.6	4.8
Dry wall		11	STEAM SYSTEM	
ory won one pleases	. 0.2	100 00	Steel pipe 8.3	
ELECTRIC WIRING		11	Wrought iron pipe 0.4	
Knob & Tube	. 27.4	1	No heating system 2.1	10.8
BX cable	30.2	1	BOILERS	100 00
Romex cable	. 24.4	1	Steel 9.8	
Rioid conduit	8.8	1	Cast iron 11.1	
BX cante and flexible count	. 0.4		No boiler 79.1	100.00
114/	-	100.00	STANDING RADIATION	
PLUMBING				
Fixture Cast Iron			Gravity	
1 baltroo (Fistures) 73.7 1½ bathroom (6 fixtures) 11.0 2 bathrooms 17 fixtures) 6.3	6.1		Exposed cast from 7.4	7.4
2 bathrooms 17 fixtures 6.3	0.5		Exposed cast Iran	
2½ hatticours (9 tixtures) 1.4	0.1		Concealed cast ron	
92.1	7.6	100.00	Concealed copper	3.8
*Each fixture count includes one kitchen	tink	100.00	STEAM	1
	p116%		Exposed cast iron	11
STALL SHOWER			Concealed cast iron	41
Included	. 23.8		Concealed copper	190
No stall shower	. 76.2	100.00	No radiators	79.1
		100.00	11-	100.90



Continued

Housing Boom May Be Over

How many homes will be built during the next few years is a most controversial subject. Early last December in the Commerce and Labor departments' forecast for 1950, 830,000 units was predicted as the probable schedule for privately financed units. They expect another 60,000 to 80,000 units to be started as part of the public housing program this year. PHA officials indicated to this writer that public housing starts may reach 135,000 this year. The Housing Act of 1949 contemplates construction of 810,000 units over the next six years, with the annual total running between 50,000 and 200,000 units. Most of these structures will be multi family type.

Basically, the number of new housing units depends on the growth and the number of families. Projections made by the Bureau of the Census show that in the early 1950's the annual increment in family growth may fall to 50 pct or less than that of recent rates. On the other hand, a population study just completed by the Bureau of Agriculture Economics, using Bureau of Census data, indicates a growth in population of about 14 million persons in 1950 to 1960. Some have assumed such a growth means more and more housing will be built and that the building boom of the past three years still leaves about 2 million families, one in 20, doubled up with relatives and therefore, these families will buy a house.

Working from this rather questionable conclusion, some observers believe that the increase in population, plus those not adequately housed, plus the trend to more and smaller families, plus the

replacement of existing inadequate homes, adds up to a need of 1 to $1\frac{1}{2}$ million units a year during the 1950's.

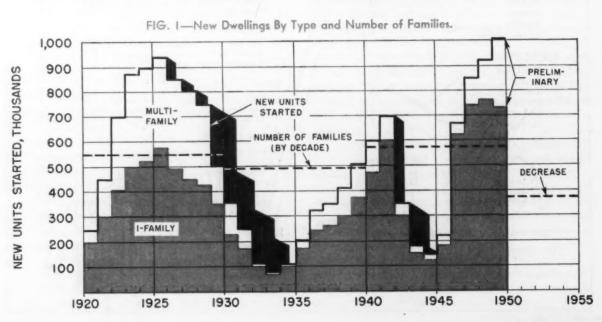
Leon Keyserling went even further. He said builders should set their sites on 2 million new homes a year by 1959, or double the 1949 building rate—that the goal of a decent home for every American family within 10 years is not just a slogan, "It is a practical objective and must be achieved."

Late in November, Henry A. Bubb, president of the U. S. Savings & Loan Assn., insisted that housing shortages will be over in two years. He publicly disagreed with Mr. Keyserling and said that a 2 million home per year volume would accrue at a faster rate than the country could absorb.

One fact is obvious. As of teday, no one knows how many homes will be built in the future. Further, it is almost impossible to calculate how many homes will be needed. Even if the need could be precisely pegged, the number of units built might not follow. Need is one thing—actual units started is another. In between are barriers as suitable prices those in need can afford, questionable undoubling rates, uncertain demolition programs, completion of slum clearance programs, and a host of others. Fig. 1 seems to be the most reliable basis on which to guess at what might happen. (Source: Dept. of Labor).

Some believe it will take one million new homes a year until 1954 to overcome the present housing shortage. From 1954 on the replacement market will increase until in 1960, 54 pct of the new homes market will be replacements. Many qualified authorities don't agree with these statements.

Table IV contains recent statistics published on age of homes and some citizens have jumped to the conclusion that we will have to replace as high as 50 pct of our old homes by 1960. This again, experts say, is wishful thinking.



PAST ABORTIONS in Steel Homes

SIGNIFICANT ATTEMPTS IN THE PAST

England—cast iron house

WHY THEY FAILED

Forgot — New materials require entirely new d methods. "Most attempts promoted only a co

> T. J. Foster, Chairman Nat'l Bridge Wks., L. I.

On the surface at least, the steel companies are not pursuing the housing field, or the steel house, to its fullest extent. Before the war many of them did explore the possibilities of the steel house. During the thirties and before they found that the extent of their participation in housing at that time was restricted to minor tonnages.

Some day they may choose to resurvey the field. This could happen tomorrow. But most steel executives don't believe it will be done until all the mills are again really looking for new outlets for their product. A sign of this is the fact that very recently a large steel company designed and is working on a new all-steel panel type home.

Will There Be Mass Housing?

Any sustained home building volume must consider basic economics. Labor costs are still high. Material costs are still high, but steel is in a good position compared to lumber. If mass housing of a growing population is to be accomplished, lower unit costs are a prerequisite. The best way is to lower costs by mass production of units. This can be done on a local basis or at the central point from which units are distributed. Each method has advantage over the other but neither method has been conducted in sufficient volume to indicate it can satisfactorily be done on a national basis.

So far it has been definitely proven that it is possible to factory build a unit, using mass production technique, at a lower cost per sq ft of house than can be done otherwise. The difficulty is that freight costs to the site and further erec-

tion on the site pile on to the point that such units are little cheaper than mass construction by regular methods by local builders on the site.

Fundamentally, the present trouble with factory-built homes of any type is - the builders learned how to build such units before they learned how to sell them in sufficient volume to effect the true economics of mass production. The factory-built house must compete in erected price, utility and size with local construction and it isn't possible unless mass production is fully attained. This means that any such effort must be subsidized over the period of years when the factory house organization is feeling its oats, before real success can be achieved. Whether this subsidy is done by private capital or government money, the hurdles are the same.

Why Not Prefabs?

Many people wonder why U. S. Steel Corp. well trained organization already in the field.

makes and promotes the sale of wooden prefabricated low priced homes. This is not as paradoxical as some think, because if the building industry should eventually find all the present barriers to factory-built homes have either disappeared or have been surmounted, Gunnison Homes, a U. S. Steel Corp. subsidiary, will have a large, active, Further, the Gunnison home design would adapt itself very readily to steel application. Steel tonnages in the present Gunnison homes are just average.

Public acceptance of prefabs is still in question. Difficult barriers like building codes, inadequate financing arrangements have in cases yet to be overcome. Gunnison Homes is one of the oldest living corporations in this field. If we are to believe that the goal of mass housing will be achieved, like the President's advisers say it must, and mass production is the answer, it would appear that the Gunnison type of approach might be the solution. The Gunnison prices are under the government figure designated for low cost housing. Should wooden prefabs prove to be a major factor in this program, the steel industry is not in for much of a cut. Steel tonnages in such

TABLE IV	AGE OF HOUSES	
	Houses 50 Years and Olde	r Pct of
	Number	Total
1940	6.034.434	22.1
1950	10,830,618	31.9
1960	15,839,359	51.6

Steel and Housing



Continued

units are even lower than the estimates on standard type construction. Total steel in the Gunnison 1-F model is but 2462 lb.

Although some of the prefabricated wooden home companies are making a profit, some for the first time, the number of homes they have erected is a drop in the bucket. The sale of steel prefabs such as Lustron, has been even more insignificant so that as yet the prefab production of homes cannot be considered significant. The Prefabricated

Home Manufacturers Institute told IRON AGE that business next year will be up 15 pct but even this is not mass housing as the government sees it. The only real attempt at mass housing has been the public housing authority program which will be almost 100 pct multiple type units in which less steel per family will be used than if it were in single unit dwellings. However, the public housing program will require 60 pct steel windows and 30 pct radiant heating.

Because the ultimate steel tonnage in residential building lies in the all-steel house, the 1949 version deserves close attention. The Lustron home is a worthy example because the Lustron design and product is widely acknowledged as the best all-steel home yet evolved, regardless of the fact that the venture appears doomed.

Steel Homes a la Lustron

Carl Strandlund, president of Lustron and his associates, have taken advantage of the lessons learned in the past. Porcelain architecture is not new, steel homes are not new. The Lustron home is merely a modern design of a house built entirely of steel specifically tailored for mass production using all the latest techniques, materials and methods. The steel tonnage used in Lustron's standard five room home is shown in Table V. This design employs porcelain architecture to the fullest extent, both inside and out. Not one piece of lumber is used anywhere in construction, trim or elsewhere. The standard home requires 1000 lb of vitreous frit.

From Table VI it can be seen that steel requirements per house are tremendous compared to any other type of home construction. Also significant is the fact that practically all this tonnage is used in sheet form. Lustron would only have to produce about 8000 units this year in order to consume half of all the steel tonnage shipped last year. It is estimated that a production of 8400 homes per year would make Lustron a going concern.

Actually, the steel companies' stake or potential tonnage in this all steel house is but a portion of the overall importance of the house to the metalworking industry. Makers of welders, presses, furnaces, roll forming machinery, spraying and painting equipment, metal preparation, fasteners, conveyers and a host of other allied industries have a stake, too. There are 16,000 spot welds in the standard five room Lustron. The welding machinery in the Columbus plant is the largest and latest of its type. The small press department alone contains 40 presses varying in size from 30 tons to 150 tons. Large presses up to 1800 tons are used.

When it is remembered that Lustron is tooled and can produce only about 45,000 homes a year at the most, the potential importance of their success to the metalworking industry can be appreciated. Table VII is a list of the general

requirements and facilities used at Lustron to tool up for their home production. Little wonder then that the acceptance of the all-steel house is of importance to the entire metalworking field—not just the steel producing companies. If only one tenth of the homes to be built this year were of porcelain architecture type, the Lustron facili-

TABLE V 131/2 TON IN LUSTRON

13/2 1011 111 203111011	
Steel Tonnage In Lustron 5 Room Home	
Bath Room	Pound
Bath Tub	15
Lavatory	4
Medicine Cabinet	3
Water Closet (Porcelain)	113
	- 111
Total	331
Kitchen	
Thor (Combination Sink & Washer)	410
Stove (Not furnished)	27!
Refrigerator (Not furnished)	22!
Cabinets	655
Ventilating Fan	11
Total	1,576
Utility Room	
Furnace	451
Hot Water Tank	330
Fuel Oil Tank	610
Total	1,391
Total Material Shipped	
Structural parts (painted)	7.080
Panels (porcelain on steel)	10,880
Cabinets (painted)	877
Miscellaneous parts	8.381
Total steel	27,041
Aluminum Windows	
Bathroom Window (1)	-
Kitchen Window (1)	15
Bedroom Windows (2)	31
Picture Windows (4)	97
Total Aluminum	146

TABLE VI

STEEL ORDERS

Types and Quantities of Steel Used in Manufacturing Lustron's 5 Room House

Hot Rolled P					
Cold Rolled					
Cold Rolled					
Vitreous Ena					
Galvanized St					
Hot Rolled S	teel %	in. R	od	 	 . 356
Total				 	 . 26,567

ties would have to be doubled to meet the demand.

It is regrettable that the product and the company had to be started with government money and therefore, is suffering some degree of public stigma. RFC is convinced the product is satisfactory. They know it is overwhelmingly acceptable to those who have bought and lived in Lustrons. RFC had only one big objection to the whole venture. The two original Lustron homes were not priced low enough to meet the need of low cost housing. By low, RFC means under \$8,500 erected.

This brings us back to the hard facts pointed out earlier. Low priced homes require mass production and Lustron wasn't able to get the plant up to capacity. Early in January they did the next best thing. They designed four additional models, the cheapest of which can be erected on a lot for around \$7,500 but it was too late.

Results of the surveys by private agencies although not yet released indicate that Ameri-

cans will buy and do like the steel house. The selling points of porcelain architecture are recognized throughout the building trade. Lower maintenance has been proven in similar structures and the marines at Quantico reported to one government agency that the savings and maintenance on the 60 Lustron homes erected there will pay for the homes within five to eight years.

TABLE VII

TOOLING FOR HOUSES

Lustron Facilities at Columbus

PLANT

Two buildings; one 1400 ft x 340 ft (exclusive of offices) and one 1000 ft x 200 ft. Each building has a mezzanine, the largest 1400 ft x 100 ft. Working heights; Main area 35 ft, under mezzanine 17 ft, on mezzanine 15 ft. Total floor area; 1,100,000 sq ft. (Approximately 23 football fields.)

EQUIPMENT

Fabrication: 160 presses and press brakes (15T to 1800T) 12 shears and 12 rolls.

Assembly: 200 welders, 8 rivet machines.

Organic finishing: 4 spray booths, world's largest flow coat machine, 4 paint mixing units, world's largest spray bonderizing

Mechanical handling: 8 miles of conveyers, 3 bridgeways between buildings, 4 railway sidings, 6 overhead cranes.

Ceramic division: 3 continuous spray pickling machines, 26 mills, 12 magnetic separators, 13 centrifugal sieves, 42 enamel storage tanks, 7 ground coat dip units, 7 ground coat reinforcing booths, 11 hand spray booths, 18 automatic spray booths, 22 hand spray booths, (following automatics), 23 driers, 11 furnaces.

MATERIAL USE

(For production of 45,000 houses per year) 562,500 tons of steel, 90,000,000 lb of enamel frit, 900,000 lb of color oxide, 1,800,000 lb of opacifier, 5,400,000 lb of clay.

Other Porcelainized Buildings

Large oil companies are ordering porcelain enamel gas stations in quantity. One of the main reasons that the oil companies are interested in this type of structure is the low maintenance cost. One large oil company has applied porcelain exteriors on service station structures for years. Recently they have evolved a structure based on a design where all surfaces, both interior and exterior as well as ceilings are vitreous enamel steel. They believe that long term maintenance costs may be as much as one-tenth less on enamel steels than on those structures using



Standard's all steel station uses 141/2 tons of sheets. Walls take 7 tons, frames, joists and roof deck, 71/2 tons.

Special Report

Continued

older and more standard construction materials. These stations cost about the same to build as did the former types. Ease of cleanliness, eye appeal, color fidelity and low maintenance have caused many oil companies to become actively interested.

For some reason the question of chipping porcelainized surfaces always comes up in discussion about Lustron or other porcelainized structures. If such surfaces are to be chipped they would certainly be put to the acid test in a gas station where mechanics often hurl wrenches and tire tools around with intense abandon. The panels in gas station porcelain structures are the same as those in the Lustron house. Today's porcelain is tough, it is a thinner coat than we had years ago and it will even bend a little without cracking. It can be damaged—but you have to work at it.

Other trends in building point to ceramic coated steel as the coming architectural material. A. O. Smith is making a steel silo in which glass is fused to the metal. This product is being enthusiastically received by the farmers.

Private interests are rumored to be interested in Lustron. If the company and its product is to be salvaged, it now appears that private capital will have to do it.

Gov't-Lustron-Steel and You

Government officials in Washington told this editor that the Lustron is a natural in government programs to house workers in new undeveloped localities such as sites for atomic energy projects, etc. Other agencies charged with building or finding adequate low cost housing in a hurry for government personnel are interested. Five room Lustrons have been erected in some parts of the country in 300 to 350 manhours.

Industrialists believe that the Columbus plant can be put on its feet by capitalizing on the various products for which it is magnificently tooled. Through utilization of its vitreous enameling facilities and metalworking plant, bathtubs, wash stands and porcelain panels used in a variety of places could be produced and sold in quantity. This would permit the company to start running at a profit while continuing further promotion and organization of the sales of its principal product—the home. This may prove to be the solution of Lustron's present predicament.

Practically everyone in the country has some sort of a stake or interest in the all steel house. The government has \$37½ million invested in the venture. Steel companies, whether they admit it or not, are vitally concerned with the potential steel tonnage. The rest of the metal working industry and the frit industry can't very well overlook the possibilities of their participation. The average citizen, short of adequate housing, is more than slightly interested.

Very seldom has there appeared in this country a product in which so many people are interested but to which so little help has been given by the interested parties. A little indirect support has appeared recently. On Nov. 30 over U. S. Steel's nationwide radio program came such statements as "Amazing new porcelain enamel, modern enamel to bring you an enduring material with literally no color limitations . . . a joy

for architects, home owners and product manufacturers." One way to correct this unusual situation of no industry support appears to be to take government backing away from the company and the product.

As of today the salient features of steel in housing are (1) The use of steel in conventional homes is growing. (2) The continued high building program for two or three years appears very likely. (3) An all steel house can be produced at low cost. (4) Porcelain architecture is the key to the real market. (5) Within a few years we shall know whether steel has finally achieved its rightful place in home construction.



A. O. Smith's Glass coated silo requires 8500 lb of sheet steel from 3/16 in. to 1/16 in. thick.



Good Tooling

gives economies

in short run production



By GENE SCHREIBER

Superintendent of Brakes, Auto Specialties Mfg. Co., Hartford, Mich. SUMMARY: Good tooling on general purpose machines of the latest design keeps pace with production needs and the precision required in the production of automobile jack and brake parts. Examples of specific short run machining operations at Auto Specialties Mig. Co.'s new Hartford, Mich., plant are described in this article.

MPLOYING the latest designs of general purpose machine tools because production runs are short and setup changes are frequent, the new plant of Auto Specialties Co., Hartford, Mich., produces several types of jacks for automotive service and double-disk tractor brakes that operate on the same principle as the brakes employed on the Chrysler Imperial model automobile. Tooling of the equipment is such that required precision can be held and faster production promoted.

Rack bars for hand lift jacks are among the products machined in an 8-ton, American broach, using the fixturing arrangement shown in fig. 1. The stock is hot rolled steel I-sections cut into 33-in. lengths. Two pieces are locked hydraulically in the fixture with the face to be broached toward the broaching tool. The broach is made

to cut 13 teeth per working pass, starting near one end of the two bars. Before each successive working stroke, the fixture is indexed by hand and cam locked in successive vertical indexing slots along the face of the fixture. With this setup, 99 teeth are cut in each of 100 racks per hr.

Center disks for brakes are malleable iron castings having a cored hole through the hub. This hole is first machined in a two-spindle Barnes Camelback drill setup, shown in fig. 2. The drill is equipped with two Forster-Barker chucks fixed to the bed. These chucks are used alternately, one being unloaded and reloaded while work proceeds on a piece under the other spindle. The piece is set into the chuck with the disk locating against the upper faces of the chuck jaws while the latter are clamped against the hub OD by a hand lever.

Tooling Improves Production

Continued

A six-flute high speed steel core drill turning at 151 rpm and power fed 0.055 in. per revolution removes about $\frac{1}{8}$ in. of metal on a side from the hole, which is not always cored true with the center. At the end of the cut, a land on this drill faces the end of the hub and chamfers its outer edge.

With this setup, one man machines about 200 pieces an hr. High speed steel tools are used because the rough casting imposes considerable shock, especially if coring is off center. At the end of this operation, the parts go to a broach, which cuts an 8-slot spline in the hole, making the piece ready for facing both sides and the OD of the disk in the No. 12 Gisholt hydraulic lathe setup.

For this operation, the piece is located on an expanding arbor having teeth that fit into four spline slots and drive on the splines. When so clamped, a roughing straddle cut is made by two tools fed in hydraulically from the front. These tools remove about 3/32 in. on a side and also turn the OD of the disk. Then, rear tools are fed in hydraulically to finish face both sides of the disk and chamfer the edges of the OD.

As this lathe completes its cycle automatically and then stops for unloading and reloading, the operator also tends a duplicate lathe identically tooled and is able to complete a total of about 187 pieces per hr.

Somewhat unusual is the machining of a steel forging having a short tapered shaft, on the large end of which is a flange of roughly elliptical shape. At the center of the flange, a shallow hole having 30° walls and a ball seat at its inner end and requiring a smooth finish, must be produced. Depth of this hole from the flange face must be held within ± 0.002 . This job formerly was done in five operations. It is now done in three operations in the No. 5 Gisholt turret lathe setup as shown in fig. 3.

In the first operation, the hole is rough drilled and a second tool at the same time turns arcs at each end of the larger flange diameter. Both of these tools are in one holder, and all tooling is high speed steel. The next turret tool is a four-flute Eclipse spot-facer that faces the flange in a single plunge cut. Finally, two tools in the third turret position complete the hole. One of these is a three-lip reamer whose nose is rounded to ball seat size. The remainder of the cutting edges taper back at a 30° angle to the maximum 1-in. diam. This tool is fed to the precise depth required and its nose edges produce the smooth finish required. The second tool in this position chamfers the outer end of the hole.

Equally interesting is the machining of a hydro-power unit for a new design of curb jack. This is a malleable iron casting having a circular



FIG. I—Removing two rack bars of l-section steel from an indexing fixture in which the teeth have been broached. The broach cuts 13 teeth per working stroke. Clamping is hydraulic, but indexing is done by hand.

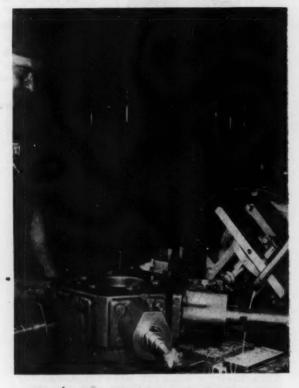


FIG. 4—This special indexing fixture is used on a Gisholt turret lathe to finish bosses on each side of a casting. After one boss is machined, the fixture and work are indexed 180° to machine the opposite boss.

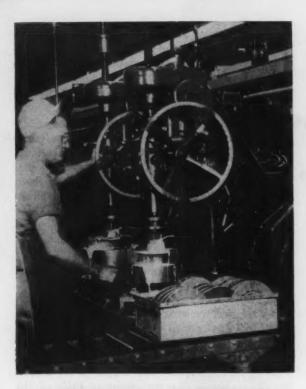


FIG. 2—This two-spindle Barnes camelback drill is equipped with two chucks on the table for loading alternately. A core drill machines the cored hole in the hub, which is also faced and chamfered.



FIG. 3—A No. 5 Gisholt turret turns arcs on the edge of a roughly elliptical flange of a forging and drills a central hole. The flange is then spot faced, after which a ball seat is formed in the hole by a round nosed reamer.



FIG. 5—Two bars 12 ft long are threaded their full length in this two-spindle Landis machine. Each bar required about 24 min to thread. The same operator tends a screw machine in which the bars are drilled and cut into short lengths.

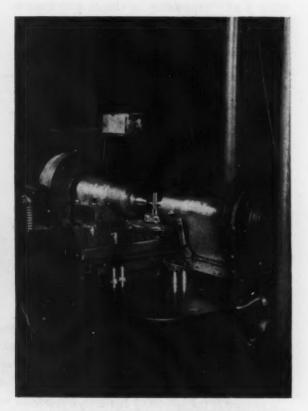


FIG. 6—A special two-spindle milling machine cuts hex flats for a wrench hold on threaded nipples. These nipples are carried on a vertical arbor that indexes automatically 120° before each working pass of the table.

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Continued

base that is faced and turned before the casting is located in the fixture shown in fig. 4, attached to a faceplate in a No. 5 Gisholt turret lathe. In this setup, it is necessary to machine bosses on opposite faces at right angles to the bottom face. Holes through these bosses must be precisely in line as well as having their common axis truly parallel to the face of the base.

To accomplish this, the casting is placed in a box fixture and fastened by screw clamps so that the base of the casting is centered in a mating recess in the base of the box. This box fixture is circular and has a pivot pin at its center. This pin passes through an angle bracket bolted to the faceplate of the lathe and the box is arranged to be indexed precisely 180° about this pivot. An indexing pin engages holes at either end of a box base diameter and, when the pin is in either hole, the boss axis of the piece is precisely coaxial with the lathe spindle axis.

When so located, the boss toward the turret is turned, faced, drilled and bored by the turret tools shown in fig. 4. Then the piece is indexed 180° and these operations are repeated on the other boss. This setup is simple and insures having the holes in line and parallel to the base of the casting. As the faceplate is a part of the fixture and has the angle bracket fastened to

it permanently, the fixture always retains its position relative to the lathe axis when the face-plate is screwed to the spindle. Attached to the box are counterweights to insure correct balance when the fixture has a casting clamped in machining position.

Pump cylinders used in several models of hydraulic jacks are tubular parts, one size measuring ½ in. ID, ¾ in. OD, and 1¾ in. long. These cylinders are produced in the screw machine from bars 12 ft long that have first been threaded their full length in the two spindle Landis machine shown in fig. 5. This machine can produce, for example, a four-pitch Acme thread on forty 1-in. bars of SAE 1050 steel 12 ft long in 8 hr.

After the threaded bars have been drilled, reamed and cut into lengths in a screw machine, it is necessary that flats be milled to form a hex wrench hold for convenience in turning to nipple when it is assembled in the mating part. The flats are cut in the special two-spindle milling machine, fig. 6, using two end mills that are rotated at 1710 rpm. The nipple is set over a vertical arbor on the reciprocating table of the machine.

After passing between the mills, which cut one flat on each side, the table automatically returns and indexes the arbor and piece 120° for the next pass. After the third pass, there are six flats and the arbor is unloaded and reloaded. With this machine, the hex is cut on 150 pieces an hr. Loading and unloading are done by hand.

New Books

"Industrial Chemistry," by E. R. Riegel. The fifth edition of this handbook covers the plants, equipment, machinery, materials and processes in over 50 chemical and process industries. New material not presented in the previous edition includes antibiotics, new organic insecticides and fungicides, utilization of wood, application of dyes to fiber, atomic energy, and recent developments in plastics and petroleum. Reinhold Publishing Corp., 330 W. 42nd St., New York. \$7.00. 1015 p.

"Symposium on Lubrication of High-Speed Turbine Gear Equipment." Includes four papers pointing out that proper lubrication of turbinedriven gears and worm gears used in turbines is of vital importance to the manufacturer, the refiner and the customer. The authors present a picture of the operating and design problems, and what has been accomplished in bringing about the great improvements in geared sets and the possible improvements yet to be realized. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. \$0.75 (paper cover). 32 p.

"Grinding Practice," third edition, by F. H. Colvin and F. A. Stanley. Complete revision covering the field of grinding machines and abrasive wheels, showing what they do, how to operate them, and the advantages in production economy that result from use of the right machines and methods. Precision grinding to millionths of an inch, grading of diamond powder for lapping, and honing and surface finish, including superfinish by modern methods, are covered in detail. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 18 \$3.75. 420 p.

"Text in Patternmaking," by A. V. Hanel. The book is designed to give the student of wood patternmaking a thorough understanding of fundamental procedures. General related information as well as pertinent specific technical data are presented; specific jobs aimed at giving the student training in basic skills in logically graduated sequence are discussed. Bruce Publishing Co., 540 N. Milwaukee St., Milwaukee 1. \$2.96. 314 p.

Welding Cuts Costs

in deep drawing front fenders



By A. B. MOOERS

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STYLING changes in automobiles in recent years have necessitated deeper draws on front fenders, especially at the point where the headlamp openings are cut. On 1949 Buicks, the draw was so deep that it became necessary to heat the nose of the fenders after the initial draw to make the metal ductile enough for the final draw in this area. This heating was cumbersome and slow, and scrap losses were rather high, despite the expense of extra operations. In addition, some welding had to be done after drawing.

These conditions led the Buick Motor Div., of General Motors Corp., to adopt a fender production technique that is new in several respects. The basic idea in this change was to preform the blank before it is put into the draw die. This necessitated a weld, running downward from the headlamp across the skirt of the fender, before the preformed piece is put into the die. The weld must be solid and yet ductile to stand the stress imposed upon it in making the draw. Having the piece fit well into the die cavity before drawing starts stretches the metal less than if a flat blank were used. Also, the surface clamped under the blank holder can be narrower and a smaller blank can be used.

Although the change in method involved certain problems, including that of making suitable welds, these have been overcome. The new method is working well and has helped to reduce scrap. Also less heavy press equipment is needed, partly because only a single draw is necessary.

Production starts with a piece blanked to cor-

SUMMARY: A fender fabrication technique, which utilizes a preformed blank of sheet steel bent and welded to near final draw size, has resulted in substantial production economies in forming Buick front fenders. The heating after the initial draw, necessary to make the final deep draw possible, along with the high scrap losses of the old method have been completely eliminated.

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Welding Aids Deep Drawing

Continued

rect contour and the several small holes pierced, the latter to locate the piece in initial forming and subsequent welding. Blanks are bent and then spotted on a pallet next to the special press that does the preforming.

This press, shown in fig. 1, is operated by an air plunger under 100 psi pressure. The lower die is first traversed horizontally with the table to which it is clamped. This motion forces the blanks against a fixed section of the die, helping to form the forward portion more nearly to die contour. When the carriage reaches the end of its travel, an upper section, more or less equivalent to a punch but hinged to the lower section, is rocked downward, giving the piece the shape shown in fig. 2A. Closing the die makes the longitudinal bend, and shapes this radius as well as the front radii.

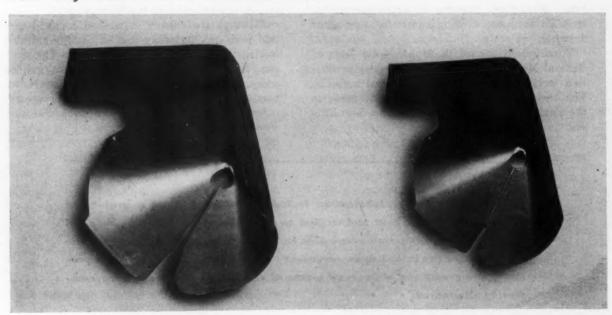
Fig. 2B shows the piece after the straight edges have been welded. Preforming actually brings the edges together but the springback forces them apart. Preforming gives the blank a somewhat conical shape. The holes at either side of the weld area locate over pins in the welding fixture, bringing the two straight edges together.

Three automatic machines attended by two operators make the welds and keep step with press operators preceding and following. Welds are made by helium shielded arcs, the welding heads being operated and traversed automatically



FIG. 1—Operated by an air-plunger under 100 psi pressure, this press forms flat stock into conical shape by a longitudinal bend.

FIG. 2—Stages in the formation of the 1949 Buick fender:



A-after preforming

B-after welding

along slots through the cast bronze upper portion of the fixtures, as shown in fig. 3. The lower section of each fixture includes a copper backup show that fits below the weld, and four pins. These pins engage the holes in the preformed piece when the latter is set in place with its edges pressed together.

The pieces are set over the lower half of the fixture, which is raised by an air plunger. Raising the plunger clamps the work in welding position between the upper hold-down and lower back-up of the fixture. When thus clamped, the operator presses a starting button and the weld is made automatically, after which the arc is broken and the welding head moves back automatically to the starting point. It requires about 20 sec to make this weld, which is about 13.5 in. long.

During the weld, helium flows around the arc and a filler of low alloy wire is fed in automatically to form a bead slightly above the surface. The wire stops feeding and is withdrawn at the end of the weld, but helium continues to flow for a few seconds to cool the tungsten electrode before the gas is shut off. Welds could be made without filler wire, but there would be a slight valley down the center of the weld, especially if the edges of the metal do not fit tightly at all points. This valley could cause splitting in the forming die, or thinning of the metal in dressing. The slightly raised bead is easily dressed flush after the fender is drawn and is ductile enough to withstand drawing and subsequent stresses.

Until an automatic welding setup was devel-

oped and installed, welds were made by hand and required about 45 sec each. These welds were not always uniform. The automatic setup is not only faster, but yields uniform welds of high quality with less electrode consumption, and with a resultant saving in cost.

After welding, the piece is set into the draw die, as shown in fig. 4, in a 900-ton Clearing double-acting press. The piece conforms roughly to the die recess. This means that comparatively little metal flow is required when the punch descends to stretch the metal to cavity shape. Only relatively narrow lands are needed for the blank holder. This helps to reduce overall size of the die. Fig. 2B shows the piece before the draw. Fig. 2C, after the draw, shows that comparatively little metal, where the blank holder gripped the piece, had to be trimmed off.

Initially, some trouble was encountered because wrinkles formed below the headlamp bulge. This was overcome by recessing the punch and making a mating projection on the die to form the bubble shown next to the lower end of the weld in fig. 2C. In forming this bubble, the metal is stretched, with the result that wrinkles no longer appear. The bubble comes at a point on the fender that is later trimmed off, as can be seen in fig. 2D.

After drawing, the piece is shifted to a singleacting, 850-ton, Clearing press equipped with three dies. The first rough trims and perforates the upper contour and rough pierces the headlamp opening; the second embosses around the headlamp opening; and the third trims the wheelhouse and catwalk, as shown in fig. 2D.



C-after drawing

D-after embossing and trimming

E—the finished fender



FIG. 3—Metal edges are automatically welded by heliumshielded arcs through slots in the cast bronze fixture.

Parts are then passed down a slide to a second 850-ton Clearing press. Here, the catwalk and grille opening are flanged, and in a second die, the wheelhouse opening flange is turned back 15° and the back edge is reflanged.

A 600-ton press performs three successive operations that flanges the door opening 90°, then restrikes to form the 135° flange, and finally turns the flange back 180°.

Final operations on the fenders are performed in a special hydraulic machine that pierces the headlamp holes, the grille tab hole, and a hole in the tab for the gravel deflector. This machine includes a series of dies disposed at the desired angle to hold the piece and guide the punches that do the piercing. The finished fender can be seen in fig. 2E. Following these operations, the fenders are ready for cleaning and finishing.

FIG. 4—This drawing die in a 900-ton Clearing double-acting press takes fender preforms after they are welded and draws them to the cavity



Low Cost Manufacture

Of Large Diameter Pipe



By PAUL J. ABEL
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Pipe mills near the point of pipe consumption are claimed feasible if set up on the basis of the mill described in this article. Freight rates, both domestic and foreign, duties on foreign shipments, insurance and other cost factors favor shipping plate to these mills for fabrication rather than purchasing completed pipe. Production methods, equipment, and sequences, as well as production and cost figures are discussed.

ARGE diameter welded steel pipe such as used for cross-country oil and gas pipe lines and for irrigation and water supply lines has been produced mainly by heavy, high capacity pipe mills. The cost of equipping such mills ranges from \$4 to \$7 million for an annual capacity from single shift operation of something approximating 5,000,000 ft.

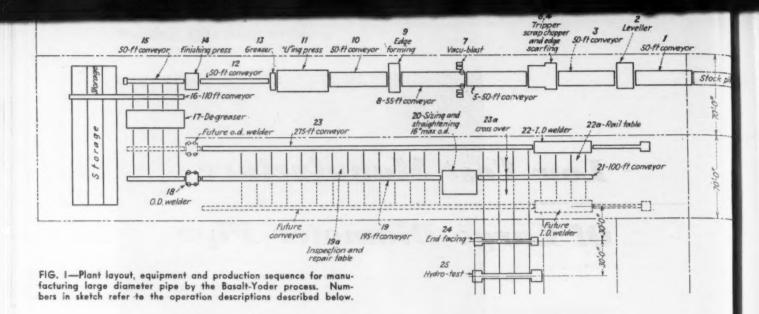
In producing this amount of pipe in the assorted sizes indicated in Table I, ranging from $12\frac{3}{4}$ to 30 in. diam, with wall thicknesses from $\frac{1}{4}$ to $\frac{1}{2}$ in., the weight would total about 170,000 tons a year. On the basis of multiple shift operation, production would total 500,000 tons or more per year for pipe in these assorted sizes providing conditions as to size, wall thickness and time consumed in roll changes were favorable.

Plate requirements of such a mill would require that pipe output is integrated with plate

mill capacity. Consequently, large pipe mills almost without exception have produced their own plate or have been owned or controlled by large steel companies operating plate mills near the pipe mills.

Since the bulk of such pipe is made in the major steel centers, freight costs on pipe to consuming areas are substantial, whether the pipe is shipped to remote domestic areas or to foreign countries. Ocean freight rates, based both on weight and volume, are high for pipe, with its great volume and relatively thin walls. Such rates are considerably higher than on the same tonnage in steel plate or skelp, often exceeding the entire conversion cost from plate to finished welded pipe.

On foreign shipments, there is the added consideration that imports of steel plate may be subject to little or no duty while heavier excises



50-ft conveyer wide enough for widest plates. It has a driven winch and cable with a mechanical clamp for aligning plate with flattener.

- 2 Yoder flattener with five or more levelling rolls and feed rolls adjustable to different stock widths.
- 3 50-ft conveyer on which flattened plate is pushed by feed rolls through side trimmer.

Side trimmer edge trims plate or slits plate to two or more strips of skelp. One strip of skelp passes to edge scarfer, next in line, while additional lengths are

- 4 moved to one side and conveyed to temporary storage. For scarfing, skelp goes through dual pinch roll stands between which a block of cutters is mounted. A scrap chopper is also located here.
- 5 Temporary storage conveyer table consisting of three chain driven, reversible transfer stands.
- 6 50-ft conveyer to blast cleaner.

Blast cleaning cabinet with continuous, automatic pressure tank, abrasives, reclaiming and recirculating de-

- 7 vices, fan and dust collector. This cleans skelp near both edges on one side only where water-cooled copper backup mandrel bears during welding.
- 8 55-ft conveyer to edging press.

Three hydraulic upstroke presses cold form the skelp. First one bends edges upwards to 60° angle in dies 5 ft long flared at entry end to admit flat skelp. A spring-mounted support bar placed longitudinally

- 9 through the press supports the plate when the press is open and clamps it during forming. Hitch feed mechanism advances plate 4 ft between strokes. Side roller guides shown in fig. 2, align stock. Press speed is 30 fpm.
- 10 50-ft conveyer to U-ing press.

U-ing press, detailed in fig. 3, forms shallow channel into deep channel in which edges curve half-way inward lie an "0" cut off close to the top. Press is 40 ft long, double cylinder, down-stroke type, with synchronizing arrangement for the ram movement control. Dies are tubular, full length, actuated by linkage motion from the bottom opposed cylinders. Cyl-

11 inder pistons are depressed by upper ram, transmitting pressure to accumulator. After forming, lower cylinders raise stock to discharge position. Conveyer rolls in press keep stock advancing at speed of 30 fpm. Upper die is punch-bulb built up in layers to accommodate pipe up to 30-in. diam. Lower rams include built-up plates and saddles as seats for punch-bulb.

- 12 Greaser lubricates upper surfaces of U-shape to fa-
- 13 50-ft conveyer on 8 ft centers, every alternate stand driven. Side guides keep U-shape in upright position.

Finishing press, shown in fig. 4, is downstroke type with uprights of welded construction and gibs for ram guides. One pilot cylinder on each side of the main

- cylinder effects quick down and up traverse. Dies 14 are 12 ft long, the upper half flared at entry end. A hitching mechanism advances pipe about 10 ft during upstrokes so 40-ft lengths pass through in four strokes, discharging as cylinders with edges abutted ready for welding.
- 15 50-ft conveyer to temporary storage or to degreaser.
- 16 110-ft conveyer to temporary storage racks.
- Degreaser consists of a large oil or gas fired tank and 17 three strands of motor driven conveyer chain for taking pipe into and out of a caustic solution filled tank.
- OD welder is a submerged melt type unit, with dual 18 head, wire feeds, flux hopper, reclaiming system and generators supported on an overhead bridge.
- 19 195-ft conveyer to repair tables.

Repair and inspection tables for the repair of defective welds. If pipe is less than 16 in. diam, it is ralled

- 19a back on conveyer (19) for passage to sizing and straightening machine. If over 16-in. diam, goes directly to end facing machine unless ID welding is necessary.
- 20 Sizing and straightening machine.
- 21 100-ft conveyer, reversible.
- Internal welder, for welding larger diameter pipe, is 22 followed by inspection and repair. From inspection station, pipe passes to
- 22a rail table, and one to the
- 23 reversible conveyer so it may be brought back into
- 23a cross-over conveyer to the
- 24 end facing machine. Following end facing, the pipe passes to the
- Hydrostating testing machine, completing the produc-25 tion operation. Coating operations are sometimes subsequently required.

Stock

may be imposed on finished pipe. Furthermore, the more adequate the capacity of a pipe mill, the less difficult it becomes to insure from outside sources a supply of plate at reasonable prices.

Such factors have long favored the establishment of pipe mills closer to the pipe consuming areas. The main obstacles have been the lack of efficient and low cost equipment for making large pipe. Equipment has been recently developed that makes possible plants of an annual pipe producing capacity of 15,000 to 75,000 tons, with an initial plant investment about 60 pct less than required in building high productivity mills.

For these more moderate tonnages, the equipment consists primarily of standard units for slitting plate and trimming; scarfing and cleaning the skelp; and special hydraulic presses for cold forming and submerged arc welding units.

Basalt Rock Co., Napa, Calif., built such a plant and has had it in operation for 1½ years. Its dependability, quality production, low labor costs, and low maintenance costs permit it to compete for nearby business with the largest and most efficient pipe mills in the East. The Yoder Co., Cleveland, undertook the further improvement of the mill and the manufacture of complete pipe mills incorporating the basic features of the plant at Napa.

For a completely equipped plant, about a dozen different machines are required, in addition to conveyers for material handling, as indicted in the plan drawing, fig. 1. On this drawing are shown all of the basic work stations, as well as descriptions of the individual units and their function.

Welding the Right Way

The uniform speed of the forming line equipment is regulated to 30 fpm or 1800 fph, which, at 75 pct efficiency of operation, would mean a maximum production of 1350 fph. Welding speed depends upon the type and number of welders used and on the thickness of the metal to be welded. Again, estimated at 75 pct efficiency, production of 135 fph is possible with ½ in. wall thickness and 248 fph for ¼ in. wall thickness. Details of welding production are shown in Table I.

On the basis of pipe sizes from 12¾ to 30 in. diam, the average production per welder is 180 fph, giving a production ratio of a single forming line to a single welding line of 7.5:1, both operated single shift. The number of welders required, therefore, would depend upon the maximum annual capacity desired and on the number of shifts per day for the forming and the welding lines, respectively.

If maximum annual production of about 75,000

tons per year were desired of the assorted sizes shown in Table II, this might be obtained by operating a skelp preparation and forming line on a single 8-hr shift and two submerged arc welders

TABLE I

WELDING PRODUCTION Ft per Hr, of Pipe

Pi	pe Size				Weldin	
Diam., In.	Wall Thickness, In.	Weight per Ft, Lb	Ft per Ton	Production* Ft per Hr	Time per Tan of Pipe, Hr	
12 ³ / ₄ 16 20 26 30	0.250 0.312 0.374 0.438 0.500	33.4 52.3 78.6 119.0 158.0	80.0 38.2 25.5 16.8 12.7	248 203 165 150 135	0.242 0.188 0.155 0.112 0.094	

* Conservatively estimated on basis of outside welding only with a double head.

TABLE II

ESTIMATED ANNUAL PRODUCTION Press-Formed, Arc-Welded Pipe Mill

Pipe Si:	to	Annual Pr		
Diam., In.	Wall Thickness, In.	Ft per Year	Tons per Year	Weight, Lb per Ft
12 ³ / ₄ 16 20 26 30	0.250 0.312 0.375 0.438 0.500	910,000 580,000 388,000 250,000 193,000	15,197 15,167 15,259 14,875 15,287	33.4 52.3 78.6 119.0 158.0
Annual Production		2,321,000	75.785	

three shifts each. It might also be obtained by using a single electric resistance welder instead of the three arc welders, operating the welder one 8-hr shift.

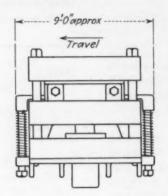
Coming back to the matter of production line arrangements and design of equipment, specific operations are described in fig. 1. On leaving the rounding press, part of the production may go directly to the welding line while the excess is placed in temporary storage for subsequent use in extra shifts by the welding line.

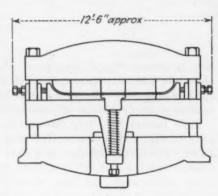
A 110-ft reversible conveyer takes unwelded pipe to and from storage while a cross-over is provided for taking the pipe through the degreaser (17) to the welding line. The OD welder (18) includes a pair of adjustable squeeze rolls, entrance and exit guide rolls mounted on a welded steel base, as shown in fig. 5. A dual head arc welder with wire feeds, flux hopper, reclaiming system and generators, are supported on an overhead bridge.

An entrance conveyer, 50-ft long, with a chaintype pusher, takes the pipe through squeeze rolls. Two pairs of rolls on longitudinal shafts raise and support the pipe to facilitate its manual positioning and alignment of the seam over the weld-

Continued

FIG. 2—The longitudinal edges of the plate are bent upward in this press arrangement.





ing mandrel. This mandrel consists of a water-cooled copper backup shoe suspended from the overhead structure at the entrance end. On the exit end, a rotating blade removes hardened flux from the weld area.

Sizes up to 16-in. OD are carried on a 195-ft conveyer (19) to a sizing and straightening machine (20) such as those used in Yoder resistance welded pipe mills, with three driven passes each provided with individually adjustable cluster rolls. The rolls are driven through universals from worm gear reducers by a common shaft and motor.

The floor plan in fig. 1 shows a mill designed to be equipped initially with one OD and one ID welder, but with provision made for possible future additions of two more OD welders and one more ID welder.

Essential parts of the initial installation insofar as the welding sequence is concerned are, as shown in fig. 1, a 195-ft conveyer (19) between the OD welder and the sizing and straightening unit (20), followed by a 100-ft reversible conveyer (21); inspection and weld repair tables (19A) and a 275-ft conveyer (23) to the left of and parallel to the 195-ft conveyer and in line with the ID welder (22).

Coming from the OD welder, pipe is kicked off to the repair tables (19A) for inspection and repairs of defective welds. If less than 16 in. diam, the pipe is rolled back to conveyer (19) for passage to the sizing and straightening machine (20). If over 16 in. diam, it will, unless ID welding is required, be sent directly to the end facing machine (24) via conveyer (23) and the crossover (23A). If it is to be internally welded, it will pass via conveyers (19) and (23) to the internal welder (22), after which it is inspected and repaired. Then it passes to the rail table (22A) and on to the reversible conveyer (21) so it may be brought back into line for the cross-over to the end facing machines (24). The entire ar-

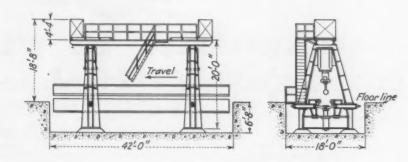
TABLE III

COST OF MANUFACTURE

Cost in Dollars, per 100 Ft of Pipe, Averaged for Five Sizes: 1234, 16, 20, 26 and 30-in. OD

Cost per 160 Ft, \$	Direct Labor	Amortization	Power	Maintenance and Replacements	Rell or Tool Replacement and Regrinding	Scrap	Grit	Welding Rod and Flux	Total	Labor Required
Steel Handling Flattener Trimmer Edge Scarfer	3.06 .51 .51	.49 .13 .49 .08	.02	.02	.13 .15 .05	5.98	****	****	3.55 .30 7.15 .65	
Vacu-Blast Edge Forming Press "U"-ing Press Rounding Press	.61 .51 .51	.22 .34 .49 .50	.58 .02 .05 .03	.25	.33 .42 .50		1.02		2.07 1.20 1.47 1.54	****
OD Welding Sizing, Straightening End Facing Hydrostatic Testing	2.04	.32 .66 .24	.06 .04 .02	1441 1411 1411	.37 .14 .38 .05	.37		5.40	8.19 1.14 1.19 1.06	4 men

FIG. 3—Details of the action of the "U"-ing press are shown here.



rangement must be flexible and all-inclusive so that pipe may be transported to suit every conceivable sequence of operation.

Length of the ID welder; length, design and arrangement of conveyers; the inclusion of a kick-off; and reversible features in conveyer are subject to infinite variations to suit individual plant needs.

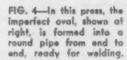
After welding, the ends of the pipe require no cropping, and the end facing machine, shown in fig. 6, squares or bevels the ends. The scrap loss in finishing is confined to metal removed in end facing, amounting to about 1/4 in. at each end.

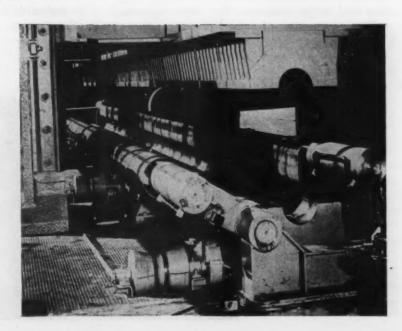
Hydrostatic testing (25) usually completes the production operation, after which coating operations are sometimes required, especially for water lines. Equipment required for these treatments consists of standard units for internal and external abrasive blast cleaning, prime coating, drying, annealing, wrapping and white-washing, to meet varying requirements.

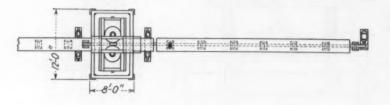
Based on experience in operating the pioneer plant of the Basalt Rock Co., an attempt has been made to estimate hourly production indicated in Table I, as well as the conversion cost in a plant equipped with one skelp preparation and forming line with two OD double-head arc welders each operated three shifts a day.

The first item is steel handling from storage to the skelp preparation line and of finished pipe to storage and shipped, using floor operated cranes. Six men per shift can handle all steel throughout the plant. In calculating the costs per 100 ft, as in Table III, the total welder production is assumed to represent the total tonnage moved. Costs are averaged for the five sizes of pipe produced in equal tonnages, as shown in Table I.

In the calculation in Table III, hourly production of the OD welding is based on figures in table I, using two welders with one man on each and 75 pct overall efficiency, to allow for change-over, time lapse between ends, down-time, etc. Welding costs also include the time of two additional men for weld repairs, welding pipe ends, etc. Weld rod used is figured at 3¢ per ft for 5/16-in. walls and other thicknesses in proportion. Flux is figured at half of the welding rod cost.







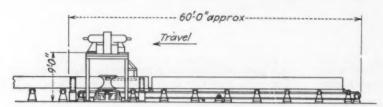


FIG. 5—Details of the arrangement for OD welding are shown here. Welding is by submerged melt process.

For sizing and straightening, no labor is required except for setup on sizes up to 16 in. OD.

End facing speed is based on a standard cutting speed of 150 sfpm, a 0.015 in. feed per revolution, and facing to an average depth of ¼ in. The estimate takes into consideration two operators. As the production rate in end facing will be five to six times greater than that of welding, it is assumed that these two operators will divide their time between end facing and hydrostatic testing. The production rate in the later operation depends largely on handling and inspection practices, but is conservatively averaged.

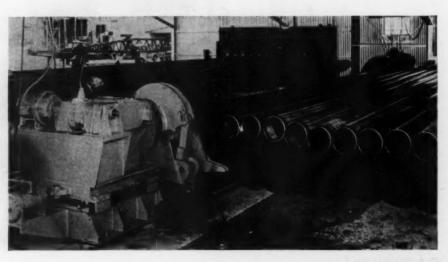
Other operations that might be required for a finished product are omitted since they are not peculiar to the process and are in the nature of extras for special requirements. For water pipe, these operations may include abrasive blast cleaning inside and outside, priming, enameling, wrapping and white-washing. For other purposes, belling or upseting of ends, hydro-expansion or

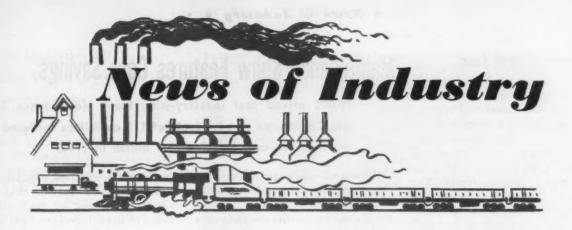
cold reduction for physicals, or threading may be required.

In the analysis of Table III, only welding on the outside was considered. Overall costs shown should be a close estimate for a product welded both inside and outside, because the added cost of a second welding operation will be largely offset by the increased welding speed. In such cases, total plant capacity will be greater.

The cost figures admittedly are based on almost ideal plant operation, but the conversion cost is so low that it might be increased considerably without threat to profitable operation since freight costs and other factors are of greater importance. Savings in ocean freight alone may amount to more than the entire cost of converting steel plate into pipe by this process. In addition, there may be savings in freight from mill to seaboard, marine insurance, import duty, and other factors.

FIG. 6—For trimming or beveling the ends of the pipe, this lathe is used. About 1/4 in. of metal is removed, this being the only scrap loss.





Special Market Study

New York—This week THE IRON AGE has made a special study of supply and demand in the steel markets across the nation. All major market areas were given special study, combined with on-the-spot interviews with steelmakers and steel buyers.

This careful study is must reading for anyone who makes, sells, buys or uses steel. It should also be very valuable as a business indicator to all types of industrialists who are pondering the imponderables of business climate during the coming year. The study appears on page 88.

Strike Hits 30 Foundries

Philadelphia—A strike of AFL molders has shut down about 30 iron and nonferrous foundries in the Philadelphia and Camden area. The molders who were getting \$1.63 an hr have asked for 10¢ an hr more, plus a paid holiday on election day. The molders are also asking for a flat rate compensation rate instead of present foundry incentive payments.

Foundries outside this area have already settled with the union at the old rate, which had been lower than the Philadelphia-Camden rate.

Declares Extra Dividend

Coatesville, Pa. — Directors of Lukens Steel Co. have declared a year-end dividend of 50¢ a share in addition to the regular quarterly dividend of 10¢ a share on common stock.

Scrap Industry Faces Up to Normal Year

Plans to improve relations with consumers, workers and public this year as members meet in Washington for Scrap Institute's annual convention—By G. F. SULLIVAN

Washington—To the scrap industry 1950 looks like the first "normal" year in a decade and its members are determined to do the best they can with it. As the Institute of Scrap Iron & Steel met here in the Statler for its 22nd annual convention to draw up a blueprint for 1950, one thing appeared certain: The wild scrap price gyrations of the immediate postwar period are not in sight for this year.

Customer Relations See-Saw

From the talk in the halls and suites a few things appeared not so certain: (1) Laying the ghost of wide price fluctuations has apparently not affected fluctuations in scrap inspection standards; (2) for the next 4 or 5 months mills will continue to buy scrap in about the same volume as they did in 1949 but no one was guessing about the rest of the year; (3) the end of scrap imports should improve the East Coast picture but most domestic salvage of war materiel is finished.

Behind plans to improve consumer, public and industrial relations was the hope of curing some of the industry's postwar headaches. Its public relations are in good shape but like all things there is always room for improvement. Same for industrial relations, but with a little more room for improvement. But consumer relations, as one broker remarked, seem to go up and down with scrap demand.

Ask Revised Standards

Aside from some private deals to be negotiated and some reasonable time out for recreation, consumer relations appeared to be the major problem for the group to settle—or at least to improve. When demand was tight there was some honest upgrading—meaning that mill scrap buyers were perfectly willing to call No. 2 No. 1 without batting an eyelash. And there has been some dishonest upgrading—meaning that a few deal-

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Expands Casting Facilities

Rochester, N. Y.—The Anstice Co., Inc., here, reports an expansion of its facilities to include die castings and permanent mold castings. The most modern automatic machinery has been purchased for this use and a staff of competent engineers with many years' experience in this field has been engaged. Production is scheduled to get under way later this month.

Scrap Faces Normal Year

continued from Page 35 ers got careless about what went into bundles and threatened to give the whole industry a black eye.

To clear up the honest upgrading problem many members thought it time that the industry got together with its customers. To see the first half of a shipment accepted by the mill while a good part of the second half is rejected is painful. Some alleged that it had something to do with mill in-





Henry A. Roemer, Jr.

Henry P. Fowler

ventory conditions. It is not a new problem but a lot of money could be saved, these scrap men felt, if some revised standards could be agreed upon.

The isolated cases of dishonest grading riled up some tempers. It seemed likely that a strong effort would be made by institute members to police the few whose actions threaten the standing of the rest.

Guest speakers included Leon H. Keyserling, chairman of the President's Council of Economic Advisers; Henry A Roemer, Jr., executive vice-president, Sharon Steel Corp.; Henry P. Fowler, general counsel, U. S. Chamber of Commerce; and M. S. Pitzele, labor editor of "Business Week." AEC Chairman David E. Lilienthal made the principal speech at the annual banquet.

Mr. Roemer, talking informally about the industry's consumer relations, quoted from a poem that ended, "Then let us trade and do it gaily, and pick each others pockets daily."

Business may have been done this

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Maintenance Show Features Cost Savings

10,000 attend first industry-wide Plant Maintenance Show and Conference . . . Products of 115 exhibitors featured . . . Maintenance cost industry \$8.6 billion in 1948.

Cleveland—Maintenance and repairs cost American industry more than \$8.6 billion in 1948, nearly double the net profits for the years 1935-1940 inclusive, James E. Sutherland, vice president, McDonald Bros., Detroit, told a technical session of the first industrywide Plant Maintenance Show and Conference in the Public Auditorium here Jan. 16-19.

Maintenance Exceeds Profits

Sponsored by the American Society of Mechanical Engineers and the Society for the Advancement of Management, the show featured products and services of 115 exhibitors. Attendance was estimated at 10,000.

More than 25 experts in maintenance engineering led panel discussions (some of which were attended by more than 1200) on phases of maintenance, which has become a major item in the cost of manufacturing.

Mr. Sutherland pointed out that



"Nothing wrong with him that a 10,000-ton order won't cure!"

increased production capacity and volume raised rather than decreased the cost of maintenance relative to each dollar of net sales, contrary to the general belief. Re

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A detailed analysis of 935 companies revealed that 15 pct spent more on maintenance than they earned in net profits after taxes in 1948. The largest companies spent an amount equal to 60 pct of net profits for maintenance in 1948.

About 20 pct of maintenance jobs account for about 80 pct of maintenance costs.

In iron and steel plants, with blast furnace facilities, maintenance costs take 10.31 pct of each dollar of net sales and require an expenditure equal to 27.25 pct of net property, he revealed.

Work Must Be Measured

Other studies relative to the 100 companies indicate that with 1949 profits dropping 30 to 40 pct, unless there was a similar drop in maintenance costs, such costs will exceed net profits in a majority of companies, Mr. Sutherland declared.

Another expert, Albert Ramond, president of Albert Ramond & Associates, Inc., Chicago, warned that positive knowledge of maintenance costs can be had only by measuring the work as it is done.

He cited a case involving the roll shop of a mill of a steel company operating many other mills and therefore able to make comparisons.

Roll turners and grinders were asked how much more they might do if they were paid on an incentive basis instead of straight day work. Their answer was, "not a thing." The same men were asked how much more production might come out of the shop if management did better planning, provided

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Freight Absorption Bill Remains Stalled in Senate

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Washington—Hope for an early settlement of the thorny delivered price dispute settled around the Federal Trade Commission this week, following the Senate's inability to agree on a legislative solution of the 2-year-old controversy.

Legislation geared to permit good-faith freight absorption has already passed the House, but remains stalled in the upper chamber due to disagreement over whether or not the FTC should bear the burden of proof in so-called "conspiracy" suits.

The Senate last week returned to conference by voice vote the House-passed bill (S 1008) declared individual freight absorption legal. Opposition to the bill raised by Senators O'Mahoney, D., Wyo.; Kefauver, D., Tenn., and Long, D., La., was chiefly responsible for the delaying move. Senate and House members of the conference are now faced with the task of eliminating those portions of the bill objectionable to the opponents, while at the same time trying to retain enough language to make freight absorption legal.

The FTC, meanwhile, has scheduled oral argument on a proposal to end the commission's complaint against steel companies for Jan.

31. The proposal, sponsored by FTC counsel Lynn C. Paulson, would permit basing-point selling in the steel industry provided each company acts independently and does not quote prices identical to those of its competitors. Four hours' argument, with industry and commission attorneys sharing the time equally, have been set for the Jan. 31 hearing.

Automatic Transmissions Up

Detroit — Increased public acceptance of the automatic transmission is indicated by the fact that Buick production during 1949 was nearly four times greater than the 1948 total — 281,024 torque converter transmissions in 1949 vs. 72,971 in 1948, when Dynaflow was introduced.



NEW STRIP MILL: Shown is the interior view of Alan Wood's new \$9 million plant addition at Conshohocken, Pa. The plant, covering seven acres, will provide the eastern Pennsylvania area with its first hot-rolled strip mill. Under construction since the latter part of 1948, the mill went into operation this week.

Alan Wood Opens New Hot Strip Mill

Mill at Conshohocken is first hot strip mill in eastern Pa...

Hot-rolled strip demand in this area reported heavy . . .

Freight advantage seen—By JOHN ANTHONY

Conshohocken, Pa.—The first hot strip mill in eastern Pennsylvania went into production here Monday when Alan Wood Steel Co. began operation of its 30-in. 6-stand hot strip mill. The new plant addition, which covers an area of about seven acres, represents a total cost of \$9 million. Capacity is rated at 218,000 tons of strip a year. Maximum width of strip produced will be 25 in.

Freight Advantage Seen

At the dedication ceremony, at which Governor James H. Duff was present, John T. Whiting, president, said that the new hot mill would enable the company to sell more of its production of ingots in the form of finished steel products. The demand for these, he said, has normally been greater and more constant than for semifinished steel products. The effect of the hot mill installation will therefore be to expand and stabilize

the company's steelmaking opera-

Demand for hot-rolled strip in this area is heavy for auto and truck frames, stampings, pipe and other steel products. Since this mill will be located very close to the large Philadelphia market, and closer than any other mill to the industrial areas of New Jersey and the metropolitan New York area, there will be a freight advantage to consumers in these areas under the f.o.b. mill price system.

The operation of the mill begins with the feeding of slabs to a modern reheating furnace with capacity of 50 tons per hr. This is a three-zone oil-fired furnace with a double slab pusher, operating separately or together, discharging to a roller table. The slab then goes through a scale breaker and a series of four roughing stands with vertical edgers.

The first four stands are driven by a single 1800 hp motor through a line shaft and reduction gears. The fifth stand is driven by a 1500-hp motor.

The finishing train includes six stands, each equipped with individual drive. Strip leaving the last stand travels at 1200 fpm. Strip may be coiled on a pair of coilers, or cut to length by means of a flying shear and a sheet piler.

Continuous coil pickling equipment operates at the rate of 3 fpm, first through a water heating bath, an acid tank and two rinse tanks. Coil pickling capacity is rated at 60 tons an hr. Additional facilities include a coil slitting line and a cut-to-length line.

The new hot mill has been under construction for more than a year. The site is on a hillside from which 150,000 cu yd of earth and rock were removed. The mill building is 1100 ft long by 170 ft wide.

Receives Bethlehem Order

Pittsburgh—The Westinghouse Electric Corp. reports that it has received an order for approximately \$650,000 of additional electrical equipment for Bethlehem's 79-in. hot strip mill at Lackawanna, N. Y.



"Mr. Mergatroyd will see you now."

Steelmakers Keep One Eye on

Consumers getting shipments on date promised . . . But new customers are having a hard time . . . First quarter books filled, second quarter is a guess—By GEORGE ELWERS

Chicago—With a few exceptions, this is the steel situation in Chicago. Consumers are getting their requirements or their quota from their regular suppliers pretty much on time and will continue to do so next quarter. First quarter books are practically filled on all products, and books for the second quarter haven't been opened yet. So deliveries just aren't being quoted.

Guess on Second Quarter

All mills can give are estimates as to how far ahead they will be booked when they do open their second quarter books. These guesses vary widely. There is general agreement on April for standard structural shapes and for narrow plates, and May for wide plates.

On bars, some producers are accepting orders for early second quarter delivery. But one major mill had all products except plates and structurals on quota in the first quarter, and expects the second quarter to be the same, including bars. Another expects to fill its second quarter order books on sheets, strip and bars.

New Customers Out of Luck

A third company flatly states that a new customer or one who wants increased tonnage hasn't a chance in the second quarter on bars or the sheet, strip and structural items which it rolls.

On the other hand, one of the big producers expects to be selling everything except sheets freely by late April or May. This producer says it knows it could fill its second quarter books with orders on most items, but suspects a lot of these orders would be cancelled before the quarter is over. So, it will take only sure orders when it opens its books, and expects they won't be too plentiful.

Six months ago sheet and strip

business was good but not spectacular, with galvanized demand strongest. No one was finding it necessary to beat the bushes for business, and cancellations were low. But, allocation was gone or being abandoned, and requests to hold up shipment on orders were not infrequent.

Today, business is terrific. Cancellation is an almost unknown word. Pressure for quick delivery is high, particularly from the automotive and appliance industries.

Allocation Will Continue

Second quarter books on sheets have not yet been opened, but most mills expect they will have to continue allocation through the second quarter. One producer of cold-rolled strip is booking orders into May and June, and restricting the amounts which can be ordered.

Plate business has picked up considerably since last summer, despite the decided slump in orders from railroad car builders. Light plates are almost as tight as sheets. As might be expected following the extra card revisions, the wider plate sizes are hardest to get.

Production is pretty well spoken for through March on narrow plates, and into May on wide plates. The heavy demand for pipe skelp has not slackened in the slightest, and allocation will be continued in the second quarter.

Small Inventories Indicated

Six months ago bar rollers were out begging for business, particularly on alloys. Now, first quarter production is pretty well sold out except in isolated cases. The best delivery being quoted on carbon bars is April, and some producers whose second quarter books aren't open yet are planning to continue allocation into the second quarter.

Most cold finishers are talking

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Production, One on Demand

Demand reported strong . . . Producers think orders are firmer than a year ago . . . Flat-rolled demand still leads the parade . . . Structural items seen mixed—By JOHN DELANEY

Pittsburgh — Despite the present heavy demand for steel, producers believe that orders on their books today are based more on actual need than was the case a year ago when consumers were ordering against already-high inventories.

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Producers point to these significant differences: (1) Consumers are more cost-conscious today, are looking for nearby sources of supply to save freight charges; (2) less interest in conversion deals by nearly everybody except some automobile manufacturers; and (3) a willingness to take a lesser tonnage than they originally felt they needed.

Little Hysteria Seen

Steel men believe that for these reasons demand is on a sounder basis this year and that orders are likely to level off gradually when demand eases, as contrasted with the sudden slump last spring and summer that followed wholesale reductions in inventories.

There is little of the hysteria of a year ago. Consumers are less willing to pay premium prices, are more cautious about building up inventories unless they are reasonably certain of a continued demand for their products. Furthermore, ordering appears to be based on a calmer appraisal of markets.

Strong Flat-Rolled Demand

Much depends on automotive—and producers are keeping their fingers crossed. Opinions vary on this. Some fear that the current high level of automobile production won't last; that the car producers will cut back operations sharply this spring. Others feel that automobile production will continue high into the summer.

Demand for flat-rolled products continues very strong, with the exception of hot-rolled strip. Some producers are still trying to catch up with orders placed on the books before the strike. Cold-rolled sheets and galvanized sheets are the tightest. Silicon sheets, particularly cold-rolled, are strong, with deliveries on cold-rolled extended to midyear.

Bars Tighter In Midwest

Demand for blooms, billets and slabs is tight through the first half. This situation is aggravated by pressure of automotive companies for conversion material. The question here is whether this pressure will continue much beyond the first quarter.

Bars are tighter in the Midwest than in the East. Delivery promises in the East would probably be late February or March, perhaps a little better in certain items. Demand is tight in the small sections; soft on items over 3-in.

The difference between East and Midwest is due to these factors: (1) More suppliers in the East; (2) one big eastern mill was the first to start up after the strike; (3) reluctance of eastern buyers to order in advance; and (4) freight charges. The situation is a carryover from before the strike. Cold-finished bars are easy.

Prompt Belivery on Alloys

Pipe and tubing, with the exception of electricweld, continue in strong demand. Buttweld pipe is sold out through the first quarter, and the second quarter also if jobbers take up their full allotments. Delivery in March and later is being promised on lapweld, and seamless is booked solid through the first quarter, with only a limited space available in the second quarter for plan end line tonnage. Electricweld pipe is fairly easy.

Consumers can get prompt delivery on alloy steels, a situation similar to that of a year ago. The backlog built up during the strike has been just about cleared up.

Demand for high strength low alloy steels is about 60 pct of the 1948-early 1949 market, according to one producer, although demand is increasing. Deliveries are running into March and April.

Structurals are mixed. Demand for wide flange sections is tight and likely to remain so for the remainder of the year. Standard beams are easier. Concrete bars and sheet piling are tight.

The outlook for stainless steel is strong for the first half. One producer reported that deliveries on sheet and strip are considerably extended. Other products, including wire, bars and tubing, are softer.

Western Steel Demand Off; Immediate Delivery on Bars

San Francisco — Demand for steel on the West Coast is only moderately strong with weakness apparent in the market for bars and structurals. Some producers give immediate delivery on these products while others quote bars at 15 to 30 days and structurals at 30

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"Why can't you be like other wives and wait until I get home with my paycheck."

INDUSTRIAL SHORTS -

BUILD WITH STEEL—"Build With Steel" is the title of a 25 min, 16 mm, colored motion picture produced for and distributed by the AMERICAN INSTITUTE OF STEEL CONSTRUCTION, New York. The picture tells the story of the fabrication and erection of structural steel.

EXPANDING—Construction of a \$3 million office building is being planned by MINNESOTA MINING & MFG. CO. A two-story manufacturing plant is now under construction at St. Paul. It is scheduled for completion next fall and will cost \$2 million.

SALES TRAINING — Pontiac Motor Div., GENERAL MOTORS CORP., Pontiac, Mich., has announced that the Pontiac dealers and their sales managers this month are attending a concentrated refresher course in sales management evolved by sales manager L. W. Ward. Thirty schools and a 40 hr course is being set up.

COMING EVENT — The AMERICAN INSTITUTE OF MINING & METALLURGICAL ENGINEERS has announced that the Institute of Metals Division will hold its annual New England regional conference on Apr. 21 and 22 at the Hotel Biltmore in Providence.

NEW COMPANY — Since all the time and facilities of Saval, Inc., are now required for the production of aircraft and related units they have formed a new company, BARKSDALE VALVES at Los Angeles to produce their Shear-Seal valves for industrial applications.

WEST COAST DEALERS—
Newly named Pacific Coast
dealers for Allis-Chalmers Mfg.
Co. general machinery division
are the HILD ELECTRIC &
MFG. CO., Stockton, Calif., and
NORTHWESTCHAIN &
SPROCKETS, INC., Portland,
Ore.

TURBINE PLANTS — Steam turbine plants in 3000 and 5000 kw sizes plus certain multiples of these ratings have been designed for use by mines, mills, utilities and industries which have an immediate need for power. They are being distributed by INTERNATIONAL GENERAL ELECTRIC CO. and are designed for rapid installation.

ACQUISITION — The entire line of air and hydraulic valves, cylinders and hydraulic power units from Gerotor May Corp., Baltimore, has been purchased by RIVETT LATHE & GRINDER INC., Boston, and will be transferred to Boston.

EUROPEAN MACHINERY—A line of European produced machinery is being made available at GEORGE SCHERR CO., INC., New York. Included are five Swiss watchmaking machines, gear hobbers, thread generators, an optical jig borer and an optical comparator gage.

MERGER — AMERICAN AIR FILTER CO., INC., Louisville, manufacturer of air filters and dust collectors, has been merged with the HERMAN NELSON CORP., Moline, Ill., heating and ventilating equipment manufacturers. The Nelson company will be operated as the Herman Nelson Div. of American Air Filter Co., Inc., and will continue in Moline.

OPENS IN HOUSTON—A new sales office in Houston has been opened by AMERICAN BRAKE SHOE CO. William C. George, who becomes sales engineer in this area, will represent the American Manganese Steel, Electro-Alloys and National Bearing Divisions.

NEW LOCATION—The operations of the ROTO-FINISH CO. has been transferred from Sturgis, Mich., to their new facory at Kalamazoo, Mich., embodying all the manufacturing facilities for producing Roto-Finish equipment and supplies.

Western Steel Demand

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to 45 days. Last July bars were on 35 to 40-day delivery and structurals about as now. There are indications that some mills are stocking a few bar shapes.

Shapes made only in the East are on a 12-week delivery basis now, whereas in July, 8 weeks was usual.

Delivery on Western-made plate is usually on a 45 to 60-day basis. In July it was on a 70 to 90-day basis.

Western-made sheets are under allocation with indications that improved production rates may soon result in some bonus tonnages. Eastern-made cold-rolled and galvanized sheets are, of course, on allocation too. Hot-rolled sheets from the East are being delivered here on an 80-day basis which is about 20 days longer than in July.

Alloy Business Returns To Normal With Small Backlogs

Cleveland — While the alloy business is good, backlogs are not big. But they are bigger than they were 3 or 6 months ago. New order volume is sufficient to support a good operating rate, but present backlogs are about 60 days. Delivery depends on treatment, particularly in the case of bars, if the tonnage ordered can be shipped right off the hot mill, delivery is about 4 weeks.

In brief, the alloy business is back to normal, and alloy producers are out for business.

Scrap Faces Normal Year

Continued from Page 86

way in the past, he said, but we are not living in the past.

Citing some cases of incorrect scrap grading he asserted that it is cheaper in the long run to do it right the first time. He complimented the group on its thinking and progressive planning, praising its seminar for training the young men of the industry.

The billion dollar scrap industry,

said Mr. Fowler, is "doing the right thing," but in framing a public relations program its job is to tell the world about it. Fortunately, he said, the scrap institute is the best qualified agency to tell this story. He suggested that the institute should undertake—or continue—to promote the industry's public relations program. It should continue to stress the way it furnished raw materials for the nation's most basic commodity without drawing on its natural resources.

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Mr. Lillienthal thrilled an audience of 1100 with a talk on his American credo, "Things we do believe."

Election of officers will be reported in next week's issue.

Resume Your Reading on Page 85

Steel Expansion Costs Decline

New York—The cost of expanding and improving the steel industry's plants and equipment was approximately \$510 million last year, according to American Iron & Steel Institute. That was the second largest outlay in the history of the industry, exceeded only by 1948 when expenditures were \$583 million.

Chicago Steel Demand

Continued from Page 88

April and May on carbon bars, and March and April on alloys. Some small tonnages of cold finished products, particularly alloys, are available for first quarter delivery on certain sizes and specifications. Pressure for on time delivery of bar products is particularly strong, indicating that customers are operating with very small inventories.

Demand for structural shapes is about the same as it was 6 months ago. Capacity for rolling wide flange beams is not able to keep up with demand, so allocation is in force and probably will be in the second quarter too. Standard shapes can't be bought for first quarter delivery, but mills are accepting orders for April.

Resume Your Reading on Page 89

Fairless Scores Unconstructive Critics

U. S. Steel head says profits are not excessive . . . Costs and responsibilities are increasing . . . Urges 'private' enterprise with plenty of 'competition'.

Newark, N. J.—"American industry has a record of service and accomplishment which should evoke unstinted public endorsement," Benjamin F. Fairless, president, U. S. Steel Corp., declared in a speech before the Thomas Alva Edison Foundation here last week. More than 400 civic leaders, educators, industrialists, professional people and students were at the forum and took part in the discussion which followed Mr. Fairless' talk.

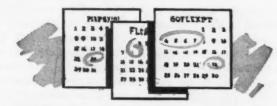
Mr. Fairless reviewed the career of Edison, "master mind, inventor,

man and benefactor of humanity."
"He blazed a trail of magnificent accomplishment, which stands forever as a beacon of inspiration to those who would travel the road to success."

Turning to current topics, Mr. Fairless said that misunderstanding of industrial affairs extends at times to profits, prices, methods of selling, aggregate size, capacity, wages and social security.

"In my opinion profits have not been excessive, or fantastic, as some have alleged. Five or six

Turn to Page 92



Dates to Remember

. REMEMBER THE MARCH OF DIMES .

Jan.		American Institute of Electrical Engineers, winter general
Feb.	3	meeting, New York.
	12-16	American Institute of Mining & Metallurgical Engineers, annual meeting, New York.
Feb.		American Society for Testing Materials, spring meeting,
Mar.		Pittsburgh.
Mar.	14-16	Society of Automotive Engineers, passenger car, body and production meeting, Detroit.
Mar.	20-25	Concrete Reinforcing Steel Institute, annual meeting, Houston.
Mar.	21-22	Steel Founders' Society of America, annual meeting, Chicago.
Apr.	3-4	Assn. of Iron & Steel Engineers, spring conference, Birming-ham.
Apr.	4-7	National Assn. of Corrosion Engineers, annual conference, St. Louis.
Apr.	4-8	Chicago Technical Societies Council, national production ex- position, Chicago.
Apr.	5-7	American Institute of Electrical Engineers, conference on electric welding, Detroit.
Apr.	5-7	Midwest Power Conference, Chicago.
	10-12	American Institute of Mining & Metallurgical Engineers, annual openhearth, blast furnace, coke oven and raw materials conference, Cincinnati.
Apr.	10-14	American Society of Tool Engineers, industrial cost-cutting exposition, Philadelphia.
Apr.	11-12	American Zinc Institute, annual meeting, St. Louis.
Apr.	12-14	American Society of Mechanical Engineers, spring meeting, Washington.
Apr.	24-	Packaging Machinery Manufacturers Institute, semiannual meeting, Chicago.
Apr.	25-26	
Apr.	27-28	American Steel Warehouse Assn., annual meeting, Houston.

The ECONOMIC SIDE-

By JOSEPH STAGG LAWRENCE

"It May Be Later Than He Thinks"

THE President has submitted his annual budget to Congress. It has provoked the usual sober reflections among business groups, the press, and the opposition. The bare bones of the budget hardly need restatement. In the 12 months ending June 30, 1951, the President proposes to spend \$42.4 billion. In the same period the Treasury will collect \$37.3 billion, leaving a gap of \$5.1 billion.

There is no point in hanging additional crape on this renewed evidence of bad fiscal housekeeping by Uncle Sam. During the last 19 years he has been in the red 17 times. At the middle of 1931 his debt was \$16.8 billion. At the mid-point of 1951 his debt will be \$263.8 billion.

Certainly this addition of another 5 or 6 billion to the federal debt is not going to wash away the foundation of the republic. In the parlance of the ring, this country has "whiskers" and can take a beating. Absolutely and relatively it can probably take more abuse than any other country in the world.

Yet there are some aspects of this position which cannot be blinked. The first is the complacence with which red ink is used by the government of the richest country on earth. No disgrace attaches to an adminsitration unable to live within its means, although the country is currently enjoying boom level prosperity. The President frankly declares that there are other things which are more serious—to him—than red ink.

Most of this complacence is certainly due to the specious rationalization of deficit financing provided by Lord Keynes. He exercised great influence on F. D. R. and may be regarded as the ideological father of pump-priming.

However, it is becoming increasingly clear that the concept of cyclically balanced budgets, with surplus accumulating in the boom years to compensate for the deficits of the lean years, reckons without human psychology. If a deficit is salutary and painless when business is low, it remains equally painless, though perhaps less salutary, at the top. Why invite the harsh discipline of a balanced budget when the use of public credit permits the accomplishment of so many good deeds? Virtue at times can be an uncomfortable and unattractive shrew.

A compensated cyclical budget in practice turns out to be a chronically unbalanced budget. It is a one-way street. Although the end of that street may not be reached while the present incumbents are still in public office, the charcater of that terminus is reasonably clear.

The record is full of countries which have repudiated their debts and debased their currencies because their governments have been unable or unwilling to live within their means. To be sure, bankruptcy in the private sense, where a sheriff seizes the assets of the debtor for a public sale, can hardly apply to the sovereign who holds top political power. But telltale symptoms are already visible.

The refusal to redeem the dollar in gold, although we hold 70 pct of the world's monetary gold stocks, corresponds to the concealment of assets by a hard-pressed debtor.

The artificial support of the government bond market, a refusal by Uncle Sam to submit his IOUs to the judgment of a free market, corresponds to the dodging of a process server.

The denial of a free market in gold which would measure the depreciation of the dollar avoids the embarrassment which a weak debtor experiences when his notes are sold at a severe discount.

Uncle Sam, it may be later than you think!

Fairless Scores Critics

cents on each dollar of sales, at present impaired purchasing power, is a moderate margin. It is particularly so in times when the consumptive needs of the country call for an expansion of capacity, and when unusually large sums of money are required to rehabilitate

and modernize productive facili-

He said that some additional revenue is needed to meet these mounting financial obligations, no small part of which is the assumption of enlarged responsibilities for social security. "A portion of the additional revenue has been sought in recently increased prices for steel, a product which is still lagging far behind the average with respect to percentage increase above prices prevailing in the prewar period."

How Big Is Big?

ties."

Mr. Fairless said he didn't know how big a company should be because there is no commonly accepted standard for measurement. But he declared that if U. S. Steel were to be replaced by 100 companies, as he had heard suggested, not one of the companies could justify operation of a single modern blast furnace. Similar illustrations can be made on ore mines, coke ovens and openhearths. It would still not be technically passable nor economically attractive.

"I am not speaking a good word for unregulated monopoly. The American attitude toward monopoly has been formulated into laws which cover the subject, and we all try to be law-abiding citizens. As a believer in private competitive enterprise, I place emphasis on the word 'competitive,' as well as on 'private.'

Socialism Is Monopoly

"It follows that the complete monopoly provided by State Socialism, where competition is wholly eliminated and incentives for efficiency are crushed, is naturally considered a menace to our free institutions, and an enemy to our progress."

Resume Your Reading on Page 91

O'Mahoney Meets the Press or The Play's the Thing

New York—This week Sen. Joseph C. O'Mahoney, chairman of the Joint Economic Committee, is conducting steel price hearings in Washington (THE IRON AGE, Dec. 29, 1949, p. 36).

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Shortly after he announced his intention of holding a steel price inquiry, Sen. O'Mahoney was interviewed on a television network by a group of writers. The interviewing was done by Marshall McNeil, of the Scripps Howard papers; Phelps Adams, of the New York Sun; Marquis Child, columnist; and Lawrence Spivak, of the American Mercury.

Senator O'Mahoney's answers provide interesting background information on the hearings which are being held this week (Jan. 24 to 27). Following are excerpts from the text of "Meet The Press" heard at 9:30 p.m., Dec. 24, 1949, over WNBT (New York) and the NBC television network:

ADAMS: "U. S. Steel was the ninth company to raise its prices. Now why didn't you denounce the first one or the second one or even the eighth, why did you wait 2 months and then come out and blast the U. S. Steel Co.?" O'MAHONEY: "I didn't wait 2 months. I don't read THE IRON AGE all the time, you know, and it wasn't until about 2 weeks before U. S. Steel raised its prices that I found some of these little companies were doing it. Now U. S. Steel, Big Steel, produces about 30 pct of all the steel that's produced in the U. S. It's recognized as the leader of the industry. It was the fourth time in less than 5 years that the price was raised. Steel is a basic commodity. It's used by thousands of businesses throughout the U.S. and it seemed to me in view of the profit situation it was an unwarranted tax upon the industry of the U. S."

ADAMS: "Well, now—now, Senator, just a minute. Out in your state, one of the greatest industries is beet sugar, isn't it?"

O'MAHONEY: "Right."

ADAMS: "Well now, I checked with the Dept. of Labor today, and they tell me that in the last 8 years the price of beet sugar has gone up further than the price of steel. Now, did you ever denounce the beet sugar manufacturers of Wyoming?"

O'MAHONEY: "I doubt very much whether that is a fact because the law under which the price of sugar and the production of sugar is governed was designed to protect the consumer as well as to protect the domestic producer, the Hawaiian producer of sugar also."

ADAMS: "Well, I can only take the figures of the B.L.S. as you have too. They are official government figures, so we'll just have to rely on them."

O'MAHONEY: "Uh-huh. Yeah."

SPIVAK: "Well, now, Senator, when the price of steel was raised you were quoted as saying almost immediately that the increase was unjustified and you promised to investigate it. Why did you say the price was unjustified before the investigation?"

O'MAHONEY: "Because of the facts that I've just stated to Mr. Adams, now that..."

SPIVAK: "Since you've already made your conclusion, why are you going to..."

O'MAHONEY: "Oh, well, but if—if the industry has facts which are not known to me, they will be presented there. They will have—they will have an open forum. They will not be harassed. They can tell their own story, but they'll have to answer questions just as I'm trying to answer questions now..."

SPIVAK: "And I've asked them. But, Senator, don't you think your committee might have waited for the investigation before you said the increase was unjustified, because, after all, your conclusion has been made and now you're going to investigate?"

O'MAHONEY: "Well, but I'm only one member of this committee, and if I expressed a personal opinion that the increase was unwarranted, I think I'm entitled to it. I've been in touch with this matter for a considerable period of time."

SPIVAK: "In your investigation of monopoly, Senator, are you going to get around at all to investigate the union monopoly?"

O'MAHONEY: "Mr. Spivak, if you had read my bill to provide national standards for national corporations, you would see that the bill also provides national standards for labor and for trade associations as well as for corporations."

SPIVAK: "That wasn't the question, Senator. The question was, are you going to investigate union monopolies?"
O'MAHONEY: "I think the—I think the labor unions are constantly under investigation of one kind or another..."

SPIVAK: "By the Senate?"

O'MAHONEY: "Well, they have been . . ."

SPIVAK: "Have they been investigated by your committee?"

O'MAHONEY: "No."

SPIVAK: "Have you any plans to investigate them, Senator?"

O'MAHONEY: "No, because our plans—our plan is an economic—our committee is an economic committee, however..."

SPIVAK: "Haven't they an effect on economics?"

O'MAHONEY: "Oh, yes indeed, and we will without question invite some of the union people to come before the committee just as we're inviting Mr. Fairless, and the forum will be just as free and open as this forum is." ADAMS: "Well, Senator, now the employees of U. S. Steel have gotten an \$80,000,000 pension and welfare fund. That's what it's going to cost a year, \$80,000,000." O'MAHONEY: "Is that so?"

ADAMS: "That is—as I understand it, those are the figures on the fund."

O'MAHONEY: "Well, I haven't received the figures yet."
ADAMS: "Well, all right. It's going to cost \$80,000,000
so steel raises its prices to produce \$80,000,000. Somebody has to pay that \$80,000,000. We can't expect Santa
Claus to do it. Where should it come from if it doesn't
come from the price of steel?"

O'MAHONEY: "It comes out of the price. It certainly ought to, but if I'm to judge from the figures that Mr. Grace gave to his stockholders in his letter of December 19th, the pension cost was not anything compared with the increased price cost."

Construction Steel Awards

Fabricated steel awards this week included the following:

- 1550 Tons, Russell, Ky., Wolf Creek power plant to Kerrigan Iron Works, Nashville, Ky.
- 550 Tons, Atlanta, parts plant for Interna-tional Harvester Co., to Gage Structural Steel Co., Chicago.
- 300 Tons, Newark, N. J., bridge, New Jersey Dept. of Highways, Eldorer Construction Co., Newark, N. J., low bidder.
- 220 Tons, Allouez, Wis., Great Northern Railway, ore dock crosswalks to Paper-Calmenson & Co., Minneapolis.
- 200 Tons, Albuquerque, N. M., Santa Fe Rail-road to Consolidated Western Steel Corp.
- 165 Tons, Huntley, Ill., factory addition for Union Machinery Co., to Joseph T. Ryer-son & Son, Chicago.
- 150 Tons, Glastonbury, Conn., 2 span con-tinuous rolled beam bridge, Brunalli Con-

struction Co., Southington, Conn., low

- 130 Tons, Monmouth County, N. J., bridge, New Jersey Dept. of Highways, Lugano Bros., Inc., Belleville, N. J., low bidder.
- 125 Tons, Orange, Tex., addition to plant, E. I. duPont do Nemours Co., to Bethle-hem Fabricators, Inc., Bethlehem.

Fabricated steel inquiries this week included the following:

- 1000 Tons, Washington, D. C., Spingarn High School, City of Washington, due Jan. 26.
- 800 Tons, Philadelphia, International Airport building, City of Philadelphia, due Feb.
- 475 Tons, Los Angeles, San Gabriel River im provements. Whittier Narrows, Los An geles District, Corps of Engineers, Seria CIVENG-04-353-50-27, bids to Feb. 28.
- 240 Tons, Lynnfield and Wakefield, Mass., bituminous concrete and two steel stringer bridges, and three concrete box bridges.

Reinforcing bar awards this week included the following:

- 1600 Tons, North Chicago, Abbott Laboratories to Joseph T. Ryerson & Son, Chicago.
- 1300 Tons, Elrams, Pa., power station to U. S. Steel Supply Co., Chicago.
- 300 Tons, Philadelphia, hospital for Veterans' Administration, through John McShain Co., Philadelphia, to Bethlehem Steel Co., Bethlehem.
- 600 Tons, Fort Wayne, Ind., Allen County war memorial to Ceco Steel Products Co., Chicago.
- 400 Tons, Westmoreland County, Pa., Penn-sylvania Turnpike section 31G to Elec-tric Welding Co., Pittsburgh.
- 400 Tons, Maumee, Ohio, grain elevator, Beth-lehem Steel Co. through McDonald Engi-neering Co., Chicago.
- 265 Tons, Dravosburg, Pa., brdge to Electric Welding Co., Pittsburgh.

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- 185 Tons, San Diego, Calif., Midway Drive bridge, through Guy F. Atkinson Co. to Southwest Steel Rolling Mills.
- 150 Tons, Chicago, Angel Guardian Orphan-age, to Concrete Steel Co., New York.
- 120 Tons, Chicago, building for Helena Ru-benstein to Ceco Steel Products Co., Chi-

Reinforcing bar inquiries this week included the following:

- 4500 Tons, Los Angeles, San Gabriel River improvements, Whittier Narrows, Los Angeles District, Corps of Engineers, Serial CIVENG-04-353-50-27, bids to Feb. 28.
- 650 Tons, Sheboygan, Wis., Edgewater power
- 140 Tons, Lynnfield and Wakefield, Mass., bituminous concrete and two steel stringer bridges, and three concrete box bridges.
- 135 Tons, Elverta, Calif., transmission line be-tween Madison and Rio Vista, Central Val-ley Project, Bureau of Reclamation, Elverta, Spec. 2883, bids to Feb. 16.

Steel plate awards this week in-

5300 Tons, Superior, Wis., 150,000 BBL tanks for Lakehead Pipeline Co., to Chicago Bridge & Iron Co., Chicago.

clude the following:

Plans Being Drafted For **Carnegie-Illinois Facilities**

Philadelphia—Preliminary plans are now being drafted for new plant facilities at Gary, Ind., for Carnegie-Illinois Steel Corp. estimated to cost \$100 million. The new facilities will include a \$20 million coal handling system, a conveyer belt transfer tower for 1000 tons coal storage, two benzol plants, two naphthalene buildings, two boiler houses and two byproduct coke plants. United Engineers & Constructors, Philadelphia, is now working on the plan.

A power plant for Republic Steel Corp. at Youngstown, estimated to cost \$6 million is also in the planning stage.

Maintenance Cost Savings

Continued from Page 86 better tools and better crane service and kept equipment in A-1 condition at all times—the answer was "probably 10 to 15 pct."

Boosting Production

The superintendent of the shop was asked the same question and his answers were just the reverse. He said that the men could do at least 10 to 15 pct more work but very little, if anything, could come from improved management.

Actually, six months after application of direct measurement and incentive, the production per man hour had increased 64 pct. Net reduction in labor cost was 23.3 pct and additional pay was 16 pct, he said.

Nobody could tell just how much improvement was due to labor and how much to management, Mr. Ramond pointed out, but both had done much better than expected. Work measurement had spotlight-

ed all the bad conditions whether due to labor or management and incentive had promoted corrective cooperation all along the line.

In this case, 95 pct of all the new and repair work going through the shop was measured and about 100 men were involved.

Supervision Is Hard

According to Mr. Ramond, maintenance is a service function. Supervision on maintenance work cannot be as positive and as effective as it can be on production work, because working locations may be far apart and it may be impossible for a foreman to see them all more than twice a day. Some companies try to compensate for the handicaps by providing additional supervision.

Actual experience of Mr. Ramond's company has been that cost of carrying out both measurement and incentive run from 3 to 6 pct of maintenance payrolls.

Resume Your Reading on Page 87

MAINTENANCE COSTS IN THE IRON AND STEEL INDUSTRY

	Number	Median			Maintenan	ce
Branch of Industry	of Companies	& Quartiles	Net Profit (After Taxes)	Pct of Net Sales	Pct of Gross Property	Property
Alloy & Foundry Products	11	Lower Median Upper	6.57 9.65 12.45	3.99 4.69 6.48	4.40 6.22 10.13	7.76 14.14 22.94
Iron & Steel—With Blast Furnace Facilities	13	Lower Median Upper	5.72 7.36 9.32	7.52 10.31 22.20	9.31 12.56 14.82	20.15 27.25 33.06
Iron & Steel—Without Blast Furnace Facilities	10	Lower Median Upper	5.40 6.88 7.95	4.31 5.27 6.89	8.76 13.29 15.80	20.37 23.30 36.23
Rolling Mills	,	Lower Median Upper	4.40 9.99 12.12	1.63 3.13 7.26	4.33 5.44 6.75	7.67 10.64 14.61
Miscellaneous Iron & Steel	17	Lower Median Upper	5.11 6.97 8.42	2.36 3.18 4.33	4.13 7.97 14.04	8.86 16.04 28.47

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AGE

IRON AGE
FOUNDED 1855
MARKETS & PRICES

Briefs and Bulletins

squeeze play—Lack of coal has forced Crucible Steel Co. to shut down one blast furnace and two openhearths at Midland, Pa. About 500 employees were thrown out of jobs. This number will increase to about 1000 by the end of the week if the coal impasse continues. The No. 3 blast furnace at the Indiana Harbor plant of Inland Steel Co. was closed down for the same reason last Thursday. Republic Steel Corp. has reduced coke production 22 pct, with pig iron output slated to be cut back beginning Friday.

u. s. steel proxy—Stockholders of U. S. Steel Corp. will meet Feb. 27 at Hoboken, N. J., to consider pension and insurance plans for 290,000 employees. In its proxy statement the corporation estimated cost of the plans at \$78 million annually, about \$67.5 million more than was previously provided. Stockholders will also be asked to permit extension of the plans to other workers not belonging to a union.

tax message—Lower transportation taxes but sharp increases in corporation tax rates were in prospect this week as Congress mulled new revenue recommendations submitted by President Truman Monday. Congress is asked to provide \$1 billion in new revenue by hiking corporation, estate and gift taxes while reducing wartime levies on transportation and many retail items.

new mills—Contract for construction of a 56-in. continuous hot-strip mill to be built at Portsmouth, Pa., has been awarded by Detroit Steel Corp. to Pittsburgh Engineering & Machine Co. Negotiations are also under way for construction of an electric weld pipe mill for producing pipe up to 16 in. at Portsmouth.

delayed—Due to unavoidable delay in the preparation of supplemental tariffs, the truck freight rate increase on iron and steel products will not become effective until Mar. 15. It had been expected to place the new rates in effect Mar. 1 (The Iron Age, Jan. 12, p. 69). The increases will average about 15 pct.

meets competition—Armco Steel Corp. has reduced the price of electrical grade sheets \$5.00 per ton, effective Jan. 5, to meet competition. The new price is \$6.70 on cut lengths and \$7.20 on coils. Inland Steel Co. had previously reduced these items.

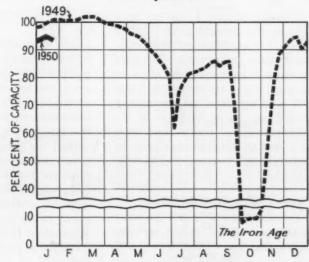
price revisions—Laclede Steel Co., St. Louis, announced the following price increases per 100 lb, effective immediately: Hot-rolled bars from \$3.35 to \$3.45; manufacturers wire from \$4.15 to \$4.50; spring wire from \$5.20 to \$5.55; MB wire from \$5.55 to \$5.90; fine and weaving wire from \$7.70 to \$8.45; rope and mild plow wire from \$7.40 to \$7.95; improved plow wire from \$7.70 to \$8.20; and wire rods from \$3.40 to \$3.85.

new kaiser—Henry Kaiser will be back in the thick of automobile competition by June 30 with a car for every buyer in every price field. In addition to a new entry to be priced competitively with Ford, Chevrolet and Plymouth, Kaiser will have a completely restyled and re-engineered Kaiser and Frazer, equipped with GM's Hydra-Matic drive.

production loss—A strike on its Monongahela connecting railroad, which hauls materials into and out of its Pittsburgh plants, forced Jones & Laughlin Steel Corp. to shut down operations at the Pittsburgh units for 20 hr during the week-end.

silicon sheets—Follansbee Steel Corp. reduced prices on silicon sheets from \$2.00 to \$10.00 per ton depending on the grade. The reductions were made to meet competition.

Steel Operations



District Operating Rates—Per Cent of Capacity

Week of	Pittsburgh	Chicago	Youngstown	Philadelphia	Cleveland	Buffalo	Wheeling	South	Detroit	West	Ohio River	St. Louis	East	Aggregate
January 18 January 22	96.5° 95.0	98.0	87.0 90.0	89.5 89.5	98.0 100.0	85.0° 90.0	101.0 101.0	102.0 103.0	100.5* 102.5	92.5 91.0	88.0 85.0	87.0 87.0	91.5 91.5	95.0° 94.0

" Revised.

January 26, 1950

Nonferrous METALS OUTLOOK

Market Activities

Coal shortage to reduce zinc supply and demand . . .

Laurel Hill refinery strike . . . Spread narrows in tin futures
. . . Lead market firmer.



1b. F 61S 29.8 3S. 24S in., 24S 47.6 P 4S-124S E 4, 3 36.7 63.5 R 8 34¢ 2S. S T4: 37.5 S 17S D 2S. 38.5 84¢

(Co. S. 0.18 10, 76¢ \$1.3 high E 0.31 23½ to 20.(E flat 1½ high 30.(E flat 1½ flat 1½ flat 1.8(flat 1.

John Anthon

New York—The zinc market is now quotable on a one price basis at 9.75¢ as most sellers have abandoned the higher price and are selling on the monthly average price. Late last week some producers were still adhering to the 10.00¢ level and selling Special High Grade on that basis.

The zinc market is reported to be firm at the present price. Sellers scout the possibility of any downward price movement. The coal shortage is exerting some effect on demand, but at the same time there will be a reduction in zinc output. Power was to be shut off at the Josephtown, Pa., smelter last week, and similar developments may be expected with worsening of the coal situation.

Copper Rise Tied to Scrap

Copper demand is still pressing heavily on sellers. It had been expected that there would be a shortage of cakes because of the furnace trouble at the Perth Amboy refinery. But it is learned that the metal will be cast at another refinery that has furnace capacity available. The brass mills are still going strong. A wildcat strike developed at the Phelps Dodge refinery at Laurel Hill, N. Y., early this week.

While the strong demand for cop-

NONFERROUS METALS PRICES

	Jan. 18	Jan. 19	Jan. 20	Jan. 21	Jan. 23	Jan. 24
Copper, electro, Conn	18.50	18.50	18.50	18.50	18.50	18.50
Copper, Lake, Conn	18,625	18.625	18.625	18.625	18,625	18.625
Tin, Straits, New York	76.25	75.50	75.50	75.50	75.50	75.50
Zinc, East St. Louis	9.75	9.75	9.75	9.75	9.75	9.75
Lead, St. Louis	11.80	11.80	11.80	11.80	11.80	11.80
Note: Quotations are going price	es.					

per over an extended period would indicate that an upward price movement might soon be expected, no such development looms immediately ahead. There are still several labor settlements yet to be made in the industry, which would tend to curtail the interest of producers in a higher price. Although scrap supplies are limited, the refinery buying price for heavy copper has been held for several weeks to the basis of 15.50¢ for No. 1. Any major increase in this scrap price might be expected to forecast a price increase.

The price of tin was reduced 34¢ by RFC on Jan. 19 to 75.50¢. Traders report that prompt tin is 75.25¢, February 74.25¢, March 74.00¢ and April 73.75¢. It is apparent that the drop in the forward tin market is slowing down. When the Singapore market opened, there was a 7¢ spread between spot and three

month delivery. The spread has been narrowed down to 1.25¢, indicating an approach to stabilization.

RFC Causes Tin Drops

One of the principal causes of the constant decline in the tin price is continuation of RFC in the market. Traders find it necessary to shade the RFC price to do business. Then RFC has to drop its price to meet competition. Traders are speculating on how low the RFC price can be dropped before international political considerations prevent further reductions. It is learned that RFC is now negotiating on tin with the Netherlands. Negotiations with the Bolivians have been suspended for the present.

The lead market is showing more strength, buoyed up by stockpiling demand that is taking about 15,000 tons a month. Producers report that they are selling their intake.

Mill Products

Aluminum

(Base prices, cents per pound, base 30,000 lb, f.o.b. shipping point, freight allowed)
Flat Sheet: 0.185 in., 28, 38, 26.9¢; 48, 415-0, 28.8¢; 528, 30.9¢; 248-0, 248-0AL, 29.8¢; 758-0, 758-0AL, 36.3¢; 0.081 in., 28, 38, 27.9¢; 48, 618-0, 20.2¢; 528, 32.3¢; 248-0, 248-0AL, 30.9¢; 758-0AL, 36¢; 0.032 in., 28, 38, 29.5¢; 48, 618-0, 38.5¢; 528, 36.2¢; 248-0, 248-0AL, 37.9¢; 758-0, 758-0AL, 47.6¢.

24S-O. 24S-OAL, 37.9¢; 75S-O. 75S-OAL, 47.5¢.
Plate: ¼ in. and heavier: 28, 38, F. 23.8¢; 48-F. 25¢; 52S-F. 27.1¢; 61S-O. 26.6¢; 24S-F. 24C-FAL, 37.1¢; 15S-F. 75S-FAL, 33.9¢.
Extraded Solid Shapes: Shape factors 1 to 4, 33.6¢ to 64¢; 11 to 13, 34.6¢ to 76¢; 23 to 25 36.7¢ to 31.05; 35 to 37, 44¢ to 31.53; 47 to 49, 63.5¢ to 32.20.
Rod, Relled: 1.5 to 4.5 in., 2S-F., 3S-F., 4½ to 30.5¢; Cold-finished, 0.375 to 3 in., 2S. 3S, 36.5¢ to 32¢.
Screw Machine Stock: Rounds, 11S-T3, R317-T4; ½ to 11/32 in., 49¢ to 38¢; ¾ to 1½ in., 37.5¢ to 35.5¢; 19/16 to 3 in., 35.5¢ to 32.5¢; 17S-T4 lower by 1¢ per lb. Bane 5000 lb.
Drawn Wire: Coiled, 0.051 to 0.374 in.; 2S. 36¢ to 26.8¢; 52S, 44¢ to 32¢; 56S, 47¢ to 38.5¢; 17S-T4, 50¢ to 34.5¢; 61S-T4, 44.5¢ to 84¢; 75S-T-6, 76¢ to 55¢.

Magnesium

(Cents per lb, f.o.b. mill, freight allowed)

Jan. 24 18.50 18.625 9.75 11.80

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b. Extruded Round Tubing: M, wall hickness, outside diam, in., 0.049 to 0.087, ¼ to 5/16, \$1.14: 5/16 to %, \$1.02; ¾ to %, 76¢: 1 to 2 in., 65¢: 0.085 to 0.082, ¾ to 7/16, 85¢: ¾ to ¾, 62¢: 1 to 2 in., 57¢: 0.165 to 0.219, ½ to ¾, 54.5¢: 1 to 2 in., 53¢: 3 to 4 in., 49¢. Other alloys higher. Base, OD in in.: Up to 1½ in., 10,000 lb; 1½ in. to 3 in., 20,000 lb; 3 in. and larger, 30,000 lb.

Nickel and Monel

(Base prices, cents per lb, f.o.b. mill)

	NICKEL	mone
Sheets, cold-rolled	60	47
Strip, cold-rolled	66	50
Rods and bars	56	45
Angles, hot-rolled		45
Plates		46
Seamless tubes	89	80
Shot and blocks		40

Copper, Brass, Bronze

(Cents per 1b, freight prepaid on 200 1b)

			Extruded
	Sheets	Rods	Shapes
Copper	32.18		31.78
Copper, h-r		28.03	
Copper, drawn.		29.28	
Low brass	30.12	29.81	33.03*
			31.70*
Red brass	30.60		33.51*
Naval brass	38.51		-28.82
Leaded brass.			
			34.27*
	04.04	04.00	01.01
	27.01	28 92	32,42
	01.01	00.02	0 4. 7 4
	50 90	51.15	
Munty metal	31.59		28.39
Everdur Her-	01.00	21.17	20.00
culor Olym-			
		20 14	
Nickel elliver	01.10	00.14	****
10 not	20.00	41 07	46.80
Arch buenne	00.00	41.01	
Commission tul			27.22
Seamless tul	Ding.		
	Copper	Copper, drawn. Low brass 30.12 Yellow brass 28.69 Red brass 30.60 Naval brass 38.51 Leaded brass Com'l bronze 27.01 Manganese bronze 27.01 Phosphor bronze 50.90 Muntz metal 31.58 Everdur, Herculoy, Olympic, etc 37.19	Copper

Primary Metals

(Cents per lb, unless otherwise noted) Aluminum, 99+%, 10,000 lb, freight	
allowed 17.00)
Aluminum pig)
Antimony American Laredo, Tex. 28.75	ŝ
Antimony, American, Laredo, Tex. 28.78 Beryllium copper, 3.75-4.25% Be	
dollars per 1b contained Be \$24.50	,
Beryllium aluminum 5% Be, dollars	
per lb contained Be\$52.00	ì
Bismuth, ton lots \$2.00	0
Cadmium, del'd \$2.00	Ú
Cobalt, 97-99% (per lb)\$1.80 to \$1.87	ř
Copper, electro, Conn. Valley 18.50	
Copper, lake, Conn. Valley 18.623	
Gold, U. S. Treas., dollars per oz \$35.00	
Indium, 99.8%, dollars per troy oz. \$2.23	ŝ
Iridium, dollars per troy oz\$100 to \$110	ñ
Took Of Toute	'n.
Lead, St. Louis	'n.
Lead, New York 12.00	3
Magnesium, 99.8+%, f.o.b. Freeport,	
Tex 20.50	U
Magnesium, sticks, 100 to 5000 lb	
	ø
Mercury, dollars per 76-lb flask f.o.b. New York \$70 to \$73 Nickel, electro, f.o.b. New York 42.9	
f.o.b. New York\$70 to \$73	3
Nickel, electro, f.o.b. New York 42.9	6
Palladium, dollars per troy oz\$24.00	0
Platinum, dollars per troy oz\$69 to \$7;	
Silver, New York, cents per oz 73.23	5
Tin, New York 75.50	ñ
Zinc, East St. Louis 9.7	28.0
Zinc, New York 10.4	7
Zirconium copper, 10-12 pct Zr. per	۰
lb contained Zr\$12.00	n
to contained 21	U

Remelted Metals

Brass Ingot

(Cents	per	10	deliver	ed, ca	rloads)
85-5-5-5 in	got				
No. 115					16.75-18.25
No. 120					16.25-17.75
No. 123					15.75-17.25
80-10-10 i					
No. 305					21.75
No. 315					19.75
88-10-2 in					
No. 210					27.75
No. 215					25.28
No. 245					18.25-21.00
Yellow in	got				
No. 405					14.25-16.00
Manganes					
No. 421					20.75

Aluminum Ingot

(Cents per lb, lot of 30,0	00 16)
95-5 aluminum-silicon alloys	
0.30 copper, max	18.50-19.00
0.60 copper, max.	18.25-18.75
Piston alloys (No. 122 type)	16.50-17.00
No. 12 alum. (No. 2 grade)	16.25-16.75
108 alloy	16.75-17.25
195 alloy	
13 alloy	
AXS-679	16.75-17.25

Steel deoxidizing aluminum, notch-bar granulated or shot

Grade	1-95-971/2	%						0		17.75-18.50
Grade	2-92-95%		0		0	0		0		16.75-17.50
Grade	3-90-92%			0			۰			15.75-16.50
Grade	4-85-90%		0	0				9		15.25-15.75

Electroplating Supplies

Anodes

(Cents per lb, freight allowed, in 500 lb lots)

200 10 1013)	
Copper	
Cast, oval, 15 in. or longer	35 1/4
Electrodeposited	29%
Rolled, oval, straight, delivered	33
Ball anodes	33%
Brass. 80-20	00 /6
Cast, oval, 15 in. or longer	3134
Zinc, oval, 99.886, f.o.b. Detroit.	1714
Ball anodes	16%
Nickel 99 pct plus	20 %
Cast	59.00
Rolled, depolarized	60.00
Cadmium	\$2.15
Silver 999 fine, rolled, 100 oz lots,	4-12-
per troy og, f.o.b. Bridgeport,	
Conn.	79
Chemicals	
(Cents per 1b, f.o.b. shipping poi	nt)
Copper cyanide, 100 lb drum	
Copper sulfate, 99.5 crystals, bbl	11.10
Nickel salts, single or double, 4-100	
lb bags, frt allowed	18.00
Nickel chloride, 300 lb bbl	24.50
Silver cyanide, 100 oz lots, per oz	59
Sodium cyanide, 96 pct domestic	
200 lb drums	19.25
Zinc sulfate, 89 pct granular	11.00
Zinc cyanide, 100 lb drums	38.00

Scrap Metals Brass Mill Scrap

(Cents per pound; add ½c per lb for shipments of 20,000 to 40,000 lb; add 1¢ for more than 40,000 lb)

Custom Smelters' Scr	ap
Leaded brass rod ends 12	1/4
Manganese bronze 12	
Commercial bronze 14	13 1/2
Red brass 14	
Yellow brass 12	
Copper 15:	
Heav	y ings

*Dry copper content.

No. 2 heavy copper and wire.	13 -131/4
Light copper	11%-12
Auto radiators (unsweated)	
No. 1 composition	
No. 1 composition turnings	1034-10%
Clean red car boxes	9 - 91/4
Cocks and faucets	9 - 91/4
Mixed heavy yellow brass	744 - 71/2
Old rolled brass	81/2- 8%
Brass pipe	914- 914
New soft brass clippings	1014-11
Brass rod ends	9 % 10
No. 1 brass rod turnings	914- 9%
Aluminum	

| Aluminum | Aluminum | Aluminum crankcases | 7 - 7 ½ | 2S aluminum crankcases | 7 - 7 ½ | 2S aluminum clippings | 10 ½ - 11 | Old sheet and utensils | 7 - 7 ½ | Borings and turnings | 4 | Misc. cast aluminum | 7 - 7 ½ | Dural clips (24S) | 7 - 7 ½ | Time | Tim

Soft seren lead 914-98

Soif sci	ap, lea				2 72	2.74
Battery	plates	(dry)			412-	4%
	1	Magne	sium	1		
Segrega	ted solid	la			9	10

									-							-		-	-	
Segregated																- 9		-1		
Castings .	. 1	0													0	5	14-	-	634	è
		h	A	ŀ	1	3	el	ŀ	a	n	e	0	t	15						
Block tin .								_	_			_	_	_		60		-6	12	

Block tin	60 -62
No. 1 pewter	
No. 1 auto babbitt	
Mixed common babbitt	9 - 91/4
Solder joints	111/2-12
Siphon tops	40 -42
Small foundry type	111/2-12
Monotype	10 1/2-11
Lino. and stereotype	9%-10%
Electrotype	814-81/4
New type shell cuttings	1114-1114
Hand picked type shells	4 - 41/2
Lino. and stereo. dross	4% - 5
Electro. dross	2%-3

January 26, 1950



Prices Hold With Mills Accepting More Scrap

A lack of price changes was in evidence in most of the markets this week. Activity still is on the weak side, but mill buying is somewhat heavier than it has been. Inventories have been dwindling and it is expected that before the end of February another buying movement should get underway. The mills have been accepting more material on their old commitments and it should not take too long to clean up some of these old orders.

The market for the cast grades is weak in most areas. Prices on these items have generally held and this is undoubtedly due to the small amount of cast on the market.

This week there was an increase of \$1.00 in the top quotation of No. 1 steel in Chicago and Boston. The Iron Age scrap composite is up 33¢ a ton for the week to \$26.75 per gross ton.

PITTSBURGH—Mills in the Pittsburgh district are living off their inventories. As a result, the scrap market here is about as dull as it has ever been in the last 6 months. Brokers are having little success interesting consumers in committing themselves for representative tonnages. Prices remain unchanged.

CHICAGO—The scrap market remained quiet in Chicago. Mill buying was a little heavier than it has been but was not substantial. Heavy melting prices went up a little but the tonnages involved were small. Bundles are generally a drug on the market although there is an as yet unconfirmed report of a substantial purchase by one mill last week, and clipping prices have firmed.

PHILADELPHIA — The market here continued its low level of activity last week. Shipments are going to one consumer on the basis of half and half bundles and melting steel. Dealers are refusing to take business calling for higher proportions of melting steel to bundles. Foundry buying of cast has been very low due to the foundry strike in progress here. Pipe foundries are not buying. But the supply of cast scrap in the market is not burdensome. There were no price changes, except on turnings to reflect a delivered price quotation.

NEW YORK — Prices remained unchanged here in a market that showed a stronger undertone. Most of the material is still moving on old commitments, and according to the trade there is very little scrap coming into the yards to fill these orders. Sources have indicated that prices have been stabilized at present levels and any future movement will be upward. The cast grades are weak with little demand for any of these items. All prices remain unchanged for the week.

DETROIT—For the second consecutive week Detroit scrap prices are unchanged. There is an almost complete absence of buying here by local mills and purchases by out-of-town interests have been negligible. There is considerable speculation here as to the damaging effect of a continuation of the coal strike, which has caused a weak undertone for the market generally. Opinion about February activity is presently divided, but until the coal impasse is cleared there is unlikely to be any crystallization of buying policy, according to informed trade sources. Cast grades are also on the weak side but prices remain at earlier levels.

CLEVELAND—A confused but firmer scrap market was developing here and in the Valley this week. Primarily as a result of consumers demanding shipment on their order, even on a schedule basis, the market seems firmer, although there have been no new sales to justify anything but optimism. Mills are very selective in their purchasing and the lists, which start closing this week, are expected to bring more than quoted prices. Cast is a little stronger.

BOSTON—The market here was mixed this week with the price of No. 1 steel and No. 1 bundles up while all the cast items were off sharply. Cast has been dull for the past year and with the sudden collapse of this market, prices are off \$5.00 on No. 1 machinery cast, \$3.00 on heavy breakable cast and stove plate, and \$2.00 on No. 2 machinery cast. For some of these items there is no market. The Warren Pipe & Foundry Co., largest user of cast in the district, is not buying a thing.

BUFFALO—A resumption of shipment to the Bethlehem Lackawanna plant was the principal feature of the scrap market during the week. The plant was forced to suspend operations temporarily when the South Buffalo (switching Ry. had a 4-day strike. The scrap market generally marked time as dealers were working off old orders. Dealers expressed a willingness to do additional business within prevailing ranges but the market lacked firm bids. Mills continued to tighten up on inspections with tin cans in bundles the main target.

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CINCINNATI—Prices are unchanged in a sloppy market here. Mills are out of the market at the moment, but may be in for a little tonnage around the first of February, but not necessarily at higher prices. Dealers' yard inventories are generally heavy, which more or less precludes a jump in prices unless a major buying movement should get under way. All openhearth grades are weak, including turnings, despite the coal strike, and the market for foundry grades is practically nonexistent at the present time.

ST. LOUIS—With steel mills out of the market until about the middle of February the scrap iron business has resolved itself into trading among dealers to fill uncompleted orders. Shipments are tapering off as orders are nearing completion. Price changes are few.

BIRMINGHAM—Mills in this district are buying only limited tonnages of openhearth grades and pipe shops and foundries are out of the market for cast grades. Demand has strengthened for blast furnace grades, and supplies of this material are not plentiful. Joes O.K. Hes one of us...

What does he mean-"One of us"?

You know what he means. Joe spells his name right. His religion is right. His folks come from the right part of the world.

Yes, maybe Joe is O. K.

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mixed steel e cast been udden f \$5.00 heavy l \$2.00 me of The t user ring a

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But the fellow who says "He's one of us"—that fellow isn't O. K. He's intolerant. Blind, unreasoning prejudice makes him think he's better than somebody else.

In your employ there may be some prejudiced folks like this. They may work for you... but they don't work together with others for you. Not very well they don't. And you ought to do something to show them

how wrong they are. You ought to do it for America's sake... for your own sake.

The Advertising Council is asking you to join hands with it in promoting *fair play* to all regardless of race, religion or national origin.

Display one of these posters in your office or your factory. Let men and women of good will know that there are other men and women of good will who believe as they do.

Help make yours a more friendly community in which more personal and direct methods may flourish and take root.

It will serve you while it serves America.

Post these
messages in
a public
place!
Copies are



write to

THE ADVERTISING COUNCIL, INC. • 25 W. 45TH ST., NEW YORK 19, N.Y.

A non-profit organization representing all phases of advertising, dedicated to the use of advertising in public service. Accept or reject people on their individual worth.

Pittsburgh

-		
No. 1 hvy. melting	29.50 1	
	27.50 1	to 28.00
No. 1 bundles	29,50 1	to 30.00
No. 2 bundles	23.50	to 24.00
Machine shop turn,	20,50 1	to 21.00
Mixed bor, and ms. turns.	20,50 1	to 21.00
Shoveling turnings	24.50	
Cast Iron borings	24.50	
Low phos. plate	32.00 1	
Heavy turnings	26.001	to 27.00
No. 1 RR, hvy, melting	31,50 1	to 32.00
Scrap rails, random lght	35.50	
Rails 2 ft and under	38.00	
RR. steel wheels	34.50	
RR. spring steel	34.50	
RR. couplers and knuckles	34.50	to 85.00
No. 1 machinery cast	37.00 1	to 38.00
Mixed yard cast	34.001	to 35.00
Heavy breakable cast	28.001	
Malleable	33.001	
ATACAS CURRENT OF A A A A A A A A A A A A A A A A	90.00	UT.UU

Chicago

	Cilicago		
NNNN MM Sh	o. 1 hvy. melting o. 2 hvy. melting o. 1 factory bundles o. 1 dealers' bundles o. 2 dealers' bundles achine shop turn. ixed bor. and turn. ived ling turnlings sat iron borings	\$27.00 to 26.00 to 27.00 to 23.00 to 20.00 to 19.00 to 20.00 to 18.00 to	27.00 28.00 24.00 21.00 20.00 20.00 21.00
Re Ri	ow phos. forge crops	31.00 to 29.00 to 30.00 to 35.00 to 40.00 to 33.00 to 34.00 to 35.00 to 42.00 to 32.00 to	30.00 31.00 36.00 41.00 39.00 34.00 35.00 36.00 44.00
He RI Ca Ca	o. 1 machinery cast. o. 1 agricul. cast. cast. R. grate bars st iron brake shoes st iron car wheels	38.00 to 37.00 to 31.00 to 29.00 to 31.00 to 37.00 to 36.00 to	38.00 32.00 30.00 32.00 38.00

Philadelphia

rinadelpina	ur.		
No. 1 hvy. melting	22.50	to	\$23.50
No. 2 hvy. melting	20.50		21.50
No. 1 bundles	22.50	to	23.50
No. 2 bundles	17.50	to	18.50
Machine shop turn	16.00	to	16.50
Mixed bor. and turn	14.00		15.00
Shoveling turnings	16.50	to	17.00
Low phos. punchings, plate	25.50	to	26.50
Low phos. 5 ft and under	24.50		25.50
Low phos. bundles	24.50	to	25.50
Hvy. axle forge turn	22.50	to	23.50
Clean cast chem. borings	28.00	to	29.00
RR. steel wheels	28.00	to	29.00
RR. spring steel	28.00	to	29.00
Rails 18 in. and under	37.00	to	38.00
No. 1 machinery cast	36.00	to	38.00
Mixed yard cast	31.00		32.00
Heavy breakable cast	33.00		34.00
Cast iron carwheels	37.00		38.00
Malleable	38.00	to	39.00

Cleveland

No. 1 hvy. melting	27.00	to	\$27.50
No. 2 hvy. melting			
No. 1 busheling	27.00		27.50
No. 1 bundles	27.00	to	27.50
No. 2 bundles	22.50	to	23.00
Machine shop turn	18.00	to	18.50
Mixed bor, and turn	19.50	to	20.00
Shoveling turnings	19.50	to	20.00
Cast iron borings	19.50		20.00
Low phos. 2 ft and under	28.50	to	29.00
Steel axle turn	26,00		26.50
Drop forge flashings	27.00		27.50
No. 1 RR, hvy. melting	31.50	40	32.00
Rails 3 ft and under	42.00		43.00
Rails 18 in. and under	43.00	to	44.00
No. 1 machinery cast	42.00	to	43.00
RR. cast	42.00	to	43.00
RR. grate bars	30.00	to	31.00
Stove plate	34.00		35.00
Malleable	38.00		39.00
	00.00	40	00,00

Youngstown

													\$30.00
No.	2	hvy.	mel	tir	ıg						27.50	to	28.00
No.	1	bund	lles			0	0		0	0	29.50	to	30.00

Scrap IRON & Prices

Going prices as obtained in the trade
by THE IRON AGE, based on representative tonnages. All prices are per
gross ton delivered to consumer unless
otherwise noted.

No. 2 bundles		·	. N					\$24.50	to	\$25.00
Machine shop tur	rn.							19.50	to	20.00
Shoveling turning								22.00	to	22.50
Cast iron borings								22.00		
Low phos. plate	0.0	0	0	0	9		0	30.50	to	31.00

Buffalo

No. 1 hvy. melting	\$27.50	to	\$28.00
No. 2 hvy. melting	25.50	to	26.00
No. 1 busheling	25.50	to	26.00
No. 1 bundles	26.50	to	27.00
No. 2 bundles	24.00	to	24.50
Machine shop turn	18.00	to	18.50
Mixed bor. and turn	19.00	to	19.50
Shoveling turnings	20.50	to	21.00
Cast iron borings	19.50	to	20.00
Low phos. plate	29.00	to	29.50
Scrap rails, random igth	33,50	to	34.00
Rails 2 ft and under	38.50		39.00
RR. steel wheels	33,00		33.50
RR. spring steel	33.00		33.50
RR. couplers and knuckles	33.00		33.50
No. 1 machinery cast	36.00	to	36.50
No. 1 cupola cast	33.50	to	34.00
Stove plate	32.50	to	33.00
Small indus. malleable	30.00	to	30.50

Birmingnam	
No. 1 hvy. melting No. 2 hvy. melting No. 2 bundles No. 1 busheling Machine shop turn. \$16.00 to Shoveling turnings 20.00 to Cast iron borings	\$25.00 24.00 22.00 24.00 17.00 21.00 19.00
Bar crops and plate 28.00 to Structural and plate 28.00 to	29.00 29.00
No. 1 RR. hvy. melt	27.00 31.00 35.00 36.00 36.00 29.00
No. 1 cupola cast	37.00 30.00 29.00

St. Louis

No. 2 bundled sheets	25.00	to to	26.00 26.00
Rails, random lengths Rails 3 ft and under Locomotive tires, uncut Angles and splice bars Std. steel car axles RR. spring steel	31.00 36.00 27.00 34.00 37.00 30.00	to to to	32.00 37.00 28.00 35.00 38.00 31.00
Cast iron brake shoes Stove plate Cast iron car wheels	36.00 30.00 27.00 25.00 34.00 28.00	to to to	37.00 31.00 28.00 26.00 35.00 30.00

New York

Brokers' buying prices per gros	s ton, on	cars:
No. 1 hvy, melting\$	19.00 to	\$19.50
No. 2 hvy, melting		
No. 2 bundles	15.75 to	16.25
Machine shop turn	10.50 to	11.00
Mixed bor, and turn	10.50 to	11.00
Shoveling turnings	11.50 to	12.00
Clean cast chem. bor	23.00 to	24.00
No. 1 machinery cast	27.50 to	28.50
	26.50 to	27.00
Charging box cast	26.50 to	27.00
Heavy breakable cast	26.50 to	27.00
Unstrp. motor blocks		23.00

Boston

Brok	cer	s' buy	ring	price	18	1	pe	r	ro	85	ton,	01	a cars:
													\$19.50
NO.	2	nvy,	me	iting	0	0			 	16	5.50	to	17.00
INO.	1	Dune	nes			0				1.3	0.00	to	19.50

No. 2 bundles\$13.50	to	\$14.00
Machine shop turn 9.50	to	10.00
Mixed bor. and turn 9.50	to	10.00
Shoveling turnings 12.00	to	12.50
No. 1 busheling 16.50	to	17.00
Clean cast chem. borings 18.00	to	18.50
No. 1 machinery cast 27.50	to	29.00
No. 2 machinery cast 24.00	to	27.00
Heavy breakable cast 22.00	to	23.00
Stove plate 22.00	to	23.00

Detroit

Brokers' buying prices per gro	es ten, on cars:
No. 1 hvy, melting	\$21.00 to \$22.00
No. 2 hvy, melting	19.00 to 20.00
No. 1 bundles	23.00 to 24.00
New busheling	22.00 to 23.00
Flashings	22.00 to 23.00
Machine shop turn	14.00 to 14.50
Mixed bor, and turn	14.00 to 14.50
Shoveling turnings	15.50 to 16.00
Cast iron borings	15.50 to 16.00
Low phos. plate	23.00 to 24.00
No. 1 cupola cast	32.00 to 33.00
Heavy breakable cast	26.00 to 27.00
Stove plate	27.00 to 28.00
Automotive cast	34.00 to 35.00

Cincinnati

Per grees ton, f.o.b. cars:

No. 1 hvy. melting	\$25.50	to	\$26.00
No. 2 hvy. melting	21.50	to	22.00
No. 1 bundles	25.50	to	26.00
No. 2 bundles	17.50	to	18.00
Machine shop turn	12.50	to	13.00
Mixed bor, and turn	12.50	to	13.00
Shoveling turnings	15.50	to	16.00
Cast iron borings	15.50	to	16.00
Low phos. 18 in. under	32.00	to	32.50
Rails, random lengths	32.00	to	33.00
Rails, 18 in. and under	40.00	to	41.00
No. 1 cupola cast	35,00	to	36.00
Hvy. breakable cast	31.00	to	32.00
Drop broken cast	40.00	to	41.00

San Francisco

No. 1 hvy, melting	\$20.00
No. 2 hvy. melting	18.00
No. 1 bundles	16.00
No. 2 bundles	16.00
No. 3 bundles	13.00
Machine shop turn	9.00
Elec. fur. 1 ft and under	28.00
No. 1 RR. hvy. melting	
Scrap rails, random lgth	20.00
No. 1 cupola cast \$30.00	to 33.00

Los Angeles

				-	-	•	•			-		-	,	_	-	-	-					
																						\$20.00
																			0			18.00
																		0				16.00
																						16.00
																		0				13.00
Mac	eh.	sho	p '	tu	r	1.			0	0		0	0	0	0		0	8		0		12.00
Ele	c.	fur.	1 1	ft	a	n	đ	1	u	n	d	0	r		0							30.00
No.	1	RR	, h	VJ		n	n	0	lt	i	n	g			0					0.		20.00
No.	1	cup	ola	C	n.s	it										\$	3	4.		0	to	37.00
	No. No. No. Mac Elec No.	No. 2 No. 1 No. 2 No. 3 Mach. Elec. No. 1	No. 2 hvy No. 1 bun No. 2 bun No. 3 bun Mach. sho Elec. fur. No. 1 RR	No. 2 hvy. 1 No. 1 bundle No. 2 bundle No. 3 bundle Mach. shop Elec. fur. 1	No. 2 hvy. me No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop tu Elec. fur. 1 ft No. 1 RR. hvy	No. 2 hvy. melt No. 1 bundles . No. 2 bundles . No. 3 bundles . Mach. shop turn Elec. fur. 1 ft a No. 1 RR. hvy.	No. 2 hvy. melting. No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and No. 1 RR. hvy. m	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and No. 1 RR. hvy. m	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and the shop turn	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and u No. 1 RR. hvy. melt	No. 2 hvy. melting . No. 1 bundles No. 3 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and un No. 1 RR. hvy. melti	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and und No. 1 RR. hvy. meltin	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and unde No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 3 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under. No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles Mach. shop turn Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 bundles No. 3 bundles Mach. shop turn. Elec. fur. 1 ft and under No. 1 RR. hvy. melting	No. 2 hvy. melting No. 1 bundles No. 2 bundles No. 3 bundles

Seattle

No. 1 hvy. melting	\$18.00
No. 2 hvy. melting	18.00
No. 1 bundles	
No. 2 bundles	
No. 3 bundles	12.00
Elec. fur. 1 ft. and under	r\$25.00 to 28.00
RR. hvy. melting	19.00
No. 1 cupola cast	
Heavy breakable cast.	20,00

Hamilton, Ont.

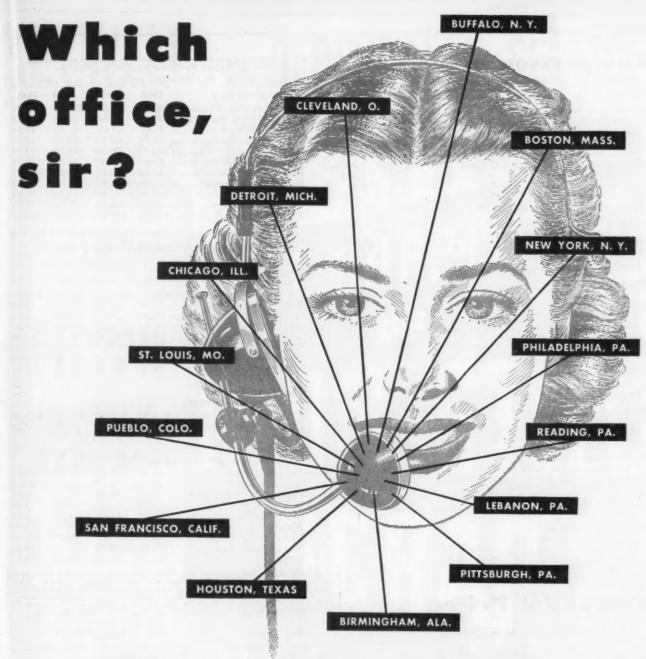
No. 1 hvy. melting			\$24.00
No. 1 bundles			16.00
No. 2 bundles			16.00
Mechanical bundles			22.00
Mixed steel scrap			20.00
Mixed bor. and turn			18.00
Rails, remelting			24.00
Rails, rerolling			27.00
Bushelings			18.50
Bush., new fact, prep'd	1		22.00
Bush., new fact, unpr	ep'd		17.00
Short steel turnings			18.00
Cast scrap		\$40.00 to	43.00

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LURIA BROTHERS AND COMPANY, INC.

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SAN FRANCISCO, CAL. Pacific Gas & Elec. Co., Bldg.

LEADERS IN IRON AND STEEL SCRAP SINCE 1889

January 26, 1950

101

Comparison of Prices

Steel prices on this page are the average of various f.o.b. quotations of major producing areas: Pittsburgh, Chicago, Gary, Cleveland, Youngstown. Flat-Rolled Steel: Jan. 24, Jan. 17, Dec. 27, Jan. 25, (cents per pound) 1950 1950 1949 1949 Hot-rolled sheets 3.35 3.35 3.35 3.26 Cold-rolled sheets 4.10 4.10 4.10 4.00 Galvanized sheets (10 ga) 4.40 4.40 4.40 4.40 Hot-rolled strip 3.25 3.25 3.25 3.265 Cold-rolled strip 4.21 4.21 4.21 4.063 iron 3.50 3.50 3.50 3.42 7.85 7.85 Stains C-R strip (No. 302) 33.00 33.00 33.00 33.25 Tin and Terneplate: (dollars per base box) Tinplate (1.50 lb) cokes.. \$7.50 \$7.75 Tinplate, electro (0.50 lb) 6.60 6.60 6.70 6.70 Special coated mfg. ternes 6.50 6.50 6.65 6.65 Bars and Shapes: (cents per pound)
Merchant bars 3.45 3.45 3.37 3.45 3,995 Cold-finished bars 3.995 3.995 3.995 3.95 Alloy bars 3.95 3.95 3.75 Structural shapes 3.40 3.40 3.25 Stainless bars (No. 302). 28.50 28.50 28.50 28.50 Wrought iron bars..... 9.50 9.50 9.50 9.50 Wire: (cents per pound) 4.256 Bright wire 4.50 4.50 4.50 Rails: (dollars per 100 lb) \$3.20 Heavy rails \$3.40 \$3.40 \$3,40 3.55 Light rails 3.75 3.75 3.75 Semifinished Steel: (dollars per net ton) Rerolling billets\$54.00 \$54.00 Slabs, rerolling 54.00 Forging billets 63.00 54.00 54.00 52.00 63.00 63.00 61.00 Alloy blooms, billets, slabs 66.00 66.00 66.00 63.00 Wire Rod and Skelp: (cents per pound) Wire rods 3.85 3.619 3.85 3.85 3.25 Skelp 3.15 3.15 3.15

Prices advances over previous week are printed in Heavy Type; declines appear in Italics.

Pig Iron: (per gross ton)	Jan. 24, 1950	Jan. 17, 1950	Dec. 27,	Jan. 25, 1949
No. 2, foundry, Phila	\$50.42	\$50.42	\$50.42	\$51.56
No. 2, Valley furnace	46.50	46.50	46.50	46.50
No. 2, Southern Cin'ti	47.08	47.08	46.08	49.46
No. 2, Birmingham	40.38	40.38	39.38	43.38
No. 2, foundry, Chicago	46.50	46.50	46.50	46.50
Basic del'd Philadelphia	49.92	49.92	49.92	50.76
Basic, Valley furnace		46.00	46.00	46.00
Malleable, Chicago†	46.50	46.50	46.50	46.50
Malleable, Valley		46.50	46.50	46.50
Charcoal, Chicago		68.56	68.56	73.78
Ferromanganeset		173.40	173.40	161.40

†The switching charge for delivery to foundries in the Chicago district is \$1 per ton.

‡Average of U. S. prices quoted on Ferroalloy page.

(per gross tons)			
Heavy melt'g steel, P'gh.\$29.75	\$29.75	\$29.75	\$40.75
Heavy melt'g steel, Phila. 23.00	23.00	23.50	41.50
Heavy melt'g steel, Ch'go 27.50	26.50	26.50	39.50
No. 1 hy. com. sh't, Det 23.50	23.50	26.50	33.50
Low phos. Young'n 30.75	30.75	31.75	47.00
No. 1, cast, Pittsburgh 37.50	37.50	38.50	59.00
No. 1, cast, Philadelphia. 37.00	37.00	37.00	51.00
No. 1, cast, Chicago 38.50	38.50	38.50	53.50

Coke: Connellsville: (per net ton at oven)

		prompt\$14.00 prompt 15.75	\$14.00 15.75	\$14.00 15.75	\$15.25 16.75
Nonferror	ıs Met	als:			

(cents per pound to large	e buyers)		
Copper, electro, Conn	18.50	18.50	18.50	23.50
Copper, Lake Conn	18.625	18.625	18.625	23.625
Tin Straits, New York	75.50	76.25	78.00 -	\$1.03
Zinc, East St. Louis	9.75	9.75	9.75	17.50
Lead, St. Louis	11.80	11.80	11.80	21.30
Aluminum, virgin	17.00	17.00	17.00	17.00
Nickel electrolytic	42.97	42.97	42.97	42.90
Magnesium, ingot	20.50	20.50	20.50	20.50
Antimony, Laredo, Tex	28.75	28.75	32.00	38.50

Starting with the issue of May 12, 1949, the weighted finished steel composite was revised for the years 1941 to date. The weights used are based on the average product shipments for the 7 years 1937 to 1940 inclusive and 1946 to 1948 inclusive. The use of quarterly figures has been eliminated because it was too sensitive. (See p. 139 of May 12, 1949, issue.)

Composite Prices

Finished Steel Base Price

	High				Lov	W	
1950	3.837¢	Jan.	3	3.8	337¢	Jan.	3
1949	3.837¢	Dec.	27	3.	705¢	May	3
1948	3.721¢	July	27	3.1	193¢	Jan.	1
1947	3.193¢	July	29	2.8	848¢	Jan.	1
1946	2.848¢	Dec.	31	2.4	164¢	Jan.	1
1945	2.464¢	May	29	2.3	396¢	Jan.	1
1944	2.3	396¢			2.39	96¢	
1943	2.3	396¢			2.3	96¢	
1942	2.3	396¢			2.39	96¢	
1941	2.3	396¢			2.39	96¢	
1940	2.30467¢	Jan.	2	2.241	107¢	Apr.	16
1939	2.35367¢	Jan.	3	2.266	689¢	May	16
1938	2.58414¢	Jan.	4			Oct.	
1937	2.58414¢	Mar.	9			Jan.	
1936	2.32263¢	Dec.	28	2.052	200¢	Mar.	10
1935	2.07642¢	Oct.	1			Jan.	
1932	1.89196¢		5			Mar.	
			28			Oct.	

High	Low
\$46.05 Jan. 17	\$45.88 Jan. 3
46.87 Jan. 18	45.88 Sept. 6
46.91 Oct. 12	39.58 Jan. 6
37.98 Dec. 30	30.14 Jan. 7
30.14 Dec. 10	25.37 Jan. 1
25.37 Oct. 23	23.61 Jan. 2
\$23.61	\$23.61
23.61	23.61
23.61	23.61
\$23.61 Mar. 20	\$23.45 Jan. 2
23.45 Dec. 23	22.61 Jan. 2
22.61 Sept. 19	20.61 Sept. 12
23.25 June 21	19.61 July 6
23.25 Mar. 9	20.25 Feb. 16
19.74 Nov. 24	18.73 Aug. 11
18.84 Nov. 5	17.83 May 14
14.81 Jan. 5	13.56 Dec. 6
	18.21 Dec. 17
at Valley furnace	ges for basic iron s and foundry iron ladelphia, Buffalo, ngham.

P	ig iron	Scrap	Steel
\$46.05	per gross ton	\$26.75 per	gross ton
	per gross ton		gross ton
	per gross ton	26.58 per	
	per gross ton	40.58 per	
High	Low	High	Low
05 Jan, 17	\$45.88 Jan. 3	\$26.75 Jan. 24	\$26.25 Jan. 8
87 Jan. 18	45.88 Sept. 6	43.00 Jan. 4	19.33 June 28
91 Oct. 12	39.58 Jan. 6	43.16 July 27	39.75 Mar. 9
98 Dec. 30	30.14 Jan. 7	42.58 Oct. 28	29.50 May 20
14 Dec. 10	25.37 Jan. 1	31.17 Dec. 24	19.17 Jan. 1
37 Oct. 23	23.61 Jan. 2	19.17 Jan. 2	18.92 May 22
\$23.61	\$23.61	19.17 Jan. 11	15.76 Oct. 24
23.61	23.61	\$19.17	\$19.17
23.61	23.61	19.17	19.17
61 Mar. 20	\$23.45 Jan. 2	\$22.00 Jan. 7	\$19.17 Apr. 10
45 Dec. 23	22.61 Jan. 2	21.83 Dec. 30	16.04 Apr. 9
61 Sept. 19	20.61 Sept. 12	22.50 Oct. 3	14.08 May 16
25 June 21	19.61 July 6	15.00 Nov. 22	11.00 June 7
25 Mar. 9	20.25 Feb. 16	21.92 Mar. 30	12.67 June 9
74 Nov. 24	18.73 Aug. 11	17.75 Dec. 21	12.67 June 8
84 Nov. 5	17.83 May 14	13.42 Dec. 10	10.33 Apr. 29
81 Jan. 5	13.56 Dec. 6	8.50 Jan. 12	6.43 July 5
71 May 14	18.21 Dec. 17	17.58 Jan. 29	14.08 Dec. 8
Talley furnace	ages for basic iron es and foundry iron iladelphia, Buffalo, ingham.	Average of No. steel scrap delive at Pittsburgh, Phi cago.	1 heavy melting red to consumers ladelphia and Chi-

Scrap Steel

Ja

KEYWELL... DEPENDABLE SERVICE
For Over 30 YEARS

STAINLESS STEEL ELECTRIC FURNACE BLAST FURNACE CAST IRON OPEN HEARTH

n. 25, 949 1.56 6.50

9.46 3.38 6.50 0.76 6.00 6.50 6.50

3.78 1.40 Chi-

0.75 1.50 9.50 3.50 7.00 9.00 1.00 3.50

5.25

3.50 3.625

1.03 7.50 1.30 7.00 2.90

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MILL SUPPLIERS
IRON STEEL
SCRAP

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Herbert W. Smith

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E. CLYDE GRIMM, VICE-PRESIDENT — TELEPHONE: GRANT 1-8030

IRON AGE	Base prices a	5malle at producing po	r numbers in pints apply o	niy to size	and grad	e preducin les preduc	g companies. ed in these are	For mair	es are in c	ations, se ents per li	e key on to unless o	acing pag therwise i	e. noted. Ex	tras apply
STEEL PRICES	Pittsburgh	Chicago	Gary	Cleve-	Ganton Mas- sillon	Middle- town	Youngs- town	Bethle- hem	Buffalo	Consho- hocken	Johns- town	Spar- rowa Point	Granite City	Detroit
INGOTS Carbon forging, net ton	\$50.00							1-1				71 14		\$50.00 81
Alloy net ten	\$51.00 1.17													\$51.00
BILLETS, BLOOMS, SLABS Carbon, rerolling, net ton	\$53.00	\$53.00	\$53.00		-		\$57.00		\$53.00	\$58.00 26	\$53.00	-		-
Carbon forging billets, net ton	\$63.00	\$63.00	\$63.00	\$63.00			\$63.00		\$63.00	\$65,00 36	\$63.00			\$63.00
Alloy, net ton	\$86.00	\$86.00	\$66.00		\$66.00		\$66.00	\$66.00	\$86.00	\$68.00	\$66.00			\$86.00
SHEET BARS							\$57.00							
PIPE SKELP	3.15						3.16							
WIRE RODS	3.85	3.85	3.85	3.85			3.85				3.85	3.93		
SHEETS Hot-rolled (18 ga. & hvr.)	3.35	3.35	3.35	3.35			3.35		3.35	3.45	8	3.35		3.55
Cold-rolled	4.101,5	23	4.10	4.10		4.10	4,10		4.10	26		4.10	4.30	4.30
Galvanized (10 gage)	7.9.15.63		4.40	4.15	4.40	7	4.6564		8			4.40	22	12
Enameling (12 gage)	1,9.15		4.40	4.40	4	4.40	4.496		-			3	4.60	4.70
Long ternes (10 gape)	4.80		4,80	4		4.80	4.9076	-	-			-	22	12
Hi Str. low alloy, h.r.	9.15	5.05	5.05	5.05		7	5.05		5.05	5.05		5.05		5.25
	1.5.9	1	1.6.8	4.5			1.4.6.18		8	26		3		12
Hi Str. low alloy, c.r.	6.20		6.20 1.6.8	6.20			6.20		6.20			8.20		6.40
Hi Str. low alloy, galv.	6.75			6.75	6.75							6.75		
STRIP Hot-rolled (over 6 in.)	3.25	3.25	3.25 1.6.8	3.25			3.25 1.4.6.18		3.25	3.35		3.25		3.45
Cold-rolled	4.15	4.30 8.66	4.30 8	4.15		4.15	4.15 4.6.13.40.48.49		4.15			4.15		4.4068.4
Hi Str. low alloy, h.r.	4.95		4.95	4.95			4.95		4.95	4.95		4.95	-	5.15 12
Hi Str. low alloy, c.r.	6.20			6.05			6.05		6.05			6.05		6.40
TINPLATE† Cokes, 1.50-lb. base bex 1.25 lb, deduct 20¢	\$7.50 1.5.9.15		\$7.50 1.6.8				\$7.50 4					\$7.60 1	\$7.70	
Electrolytic 0.25, 0.50, 0.75 lb bex				Deduct 5	1.15, 90¢	and 65¢ r	espectively fro	m 1.50-lb	coke base	e box price				
BLACKPLATE, 29 gage Hollowware enameling	5.30		5.30				5.30					5.40		
BARS Carbon steel	3.45	3.45	3.45	3.45	3.45		3.45		3.45		3.45	-	22	3.65
Reinforcing‡	3.45	3.45	3.45	3.45	3.45		3.45		3.45		3.45	3.45		4.6
Cold-finished	4.10 ⁵ 4.15 ² ·4 17.52.69.71	4.15 ² 23.69.70	4.15 4.73.74	4.15 2.61	4.15 4.32 4.1582		4.15 6.40.57		4.15 70		3	8		4.39
Alloy, hot-rolled	3.95	3.95	3.95		3.95		3.95	3.95	3.95		3.95			4.25
Alloy, cold-drawn	4.65	4.90	4.90	4.90	4.90		4.90	4.90	4.93		-			1.0
Hi Str. low alloy, h.r.	17.52.69.71 5.20	28,69.70	5.20	5.20	4.42.82		5.20	5.20	5.20		5.20			5.40
PLATE Carbon Steel	3.50	3.50	3,50 1,6.8	3.50			3,50	8	3.50	3.60	3.50	3.50		3.75 12
Floor plates	4.55	4.55	4.55	4.55			1			4.55		-		
Alloy	4.40	4.40	4.40	-			4.40		-	4.40	4.40	4.49		
Hi Str. low alley	5.35	5.35	5.35	5.535			5.35			5.35	5.35	5.35		5.60
SHAPES, Structural	3.40	3.40	3,40	410				3.45	3.45		3.45	-		
Hi Str. low alloy	5.15	5.15	5.15	-			5.15	5.15	5.15		5.15			
MANUFACTURERS' WIRE	4.50	4.50	1.6.8	4.50			4.50	8 Kokomi	a 0=4 60 ³		4.50	4.60	Dulut	h=4.50 ² l=4.75 ¹
Bright	2.5.18	4-12-28-34		2.77			6		4.20	-	3	3	Pueb	m= 4.751

Cansas		Birm-	WEST COAST Seattle, San Francisco,		STEEL PRICES
City	Houston	ingham	Los Angeles, Fontana		INGOTS
*	\$59.00				Carbon forging, net ton
	88	\$53.00	F=\$72.0019		BILLETS, BLOOMS, SLABS
	\$71.00	11 \$63.00	F=\$82.0019	Geneva = \$61,0016	Carbon, rerolling, net ton
	83	11		Geneva = \$51,00**	Carbon forging billets, net to
	\$74.00 88		F=\$82.0019		Alloy net ton
				Portamouth = \$55.00 ²⁰	SHEET BARS
					PIPE SKELP
	4.25	3.85	SF, LA=4.65 ²⁴ LA=4.20 ⁰²	Portsmouth = 3.85 ²⁰ Worcester = 4.15 ²	WIRE RODS
		3.35	SF, LA=4.05 ³⁴ F=4.25 ¹⁹	Ashland ⁷ = 3.35 Niles = 3.50 ^{6.4}	SHEETS Hot-rolled (18 ga. & hvr.)
		4.10	SF=5.05 ²⁴ F=5.00 ¹⁹		Cold-rolled
		4.40	SF, LA=5.15 ²⁴	Ashland = 4.487	Galvanized (10 gage)
		4-11		Kokomo = 4.5030	Enameling (12 gage)
					Long ternes (10 gage)
		5.05	F=6.7419		
		11	F=7.0519		Hi Str. low alloy, h.r.
			F=7.00·		Hi Str. low alloy, c.r.
					Hi Str. low alloy, galv.
3.85	3.65	3.25	SF, LA=4.0062 F=4.4019 S=4.2562	Ashland = 3.257 Atlanta = 3.40°5	STRIP Hot-rolled
			F=5.4019 LA=5.50 ²⁷	New Haven=4,65 ^{2,68}	Cold-rolled
		4.95	F=6.84 ¹⁹		Hi Str. low alloy, h.r.
		-	F=6.9519		Hi Str. low alloy ,c.r.
		\$7.60 11	SF=\$8.25 ²⁴		TINPLATE Cokes, 1.50-lb base box 1.25 lb, deduct 20¢
1	Deduct \$1.	15, 90¢ a	nd 65¢ respectively from 1.5	50-lb coke base box price	Electrolytic 0.25, 0.50, 0.75 lb box
					BLACKPLATE, 29 gage Hollowware enameling
4.05	3.85	3.45	SF, LA=4.15 ²⁴ LA=4.15 ⁶²	Atlanta = 3,80 ^{6.5}	BARS Carbon steel
4.05	3.85	3.45	SF, S=4.20 ⁶³ F=4.10 ¹⁹	Atlanta = 3.80 ^{6.5}	Reinforcing‡
13	83	4,11	(F=4,10·-	Putnam, Newark = 4.55°°	Cold-finished
4.55	4.35		LA=5.0062		Alloy, hot-rolled
13	83		F=4.95 ¹⁹	Newark,69 Worcester2 = 4.95	Alloy, cold-drawn
		5.20	F=6.2519	Hartford = 5.204	Hi Str. lew alloy, h.r.
	3.90	3.50	F=4.10 ¹⁰	Claymont = 3.60 ²⁹	PLATE
7	83	4.11	S=4.40 ^{6.2} Geneva=3.50 ^{1.6}	Coatesville = 3.60 ²¹ Harrisburg = 3.50 ³⁵	Carbon steel
0				Harrieburg = 4.5635	Floor plates
			F=5.4019	Coatesville = 4.5031	Alloy
		5.35	F=5.9519	Geneva = 5.3516	Hi Str. low alloy
4.00	3.80	3.40	SF=3.9562 LA=4.00,24.62	Phoenixville=3.30 ⁵⁶ Geneva=3.40 ¹⁶	SHAPES, Structural
		5.15	F=4.00 ¹⁹ S=4.05 ⁸²	Fontana = 5.7519	Hi Str. low alloy
5.10	4.90	4.50	SF, LA=5.45 ²⁴ LA=5.10 ⁶²	Portsmouth = 4.50 ²⁰ Worcester = 4.80 ²	MANUFACTURERS' WIRE

KEY TO STEEL PRODUCERS

With Principal Offices

- 1 Carnegie-Illinois Steel Corp., Pittsburgh
- 2 American Steel & Wire Co., Cleveland
- 3 Bethlehem Steel Co., Bethlehem
- 4 Republic Steel Corp., Cleveland
- 5 Jones & Laughlin Steel Corp., Pittsburgh
- 6 Youngstown Sheet & Tube Co., Youngstown
- 7 Armco Steel Corp., Middletown, Ohio
- 8 Inland Steel Co., Chicago
- 9 Weirton Steel Co., Weirton, W. Va.
- 10 National Tube Co., Pittsburgh
- Il Tennessee Coal, Iron & R. R. Co., Birmingham 12 Great Lakes Steel Corp., Detroit
- 13 Sharon Steel Corp., Sharon, Pa.
- 14 Colorado Fuel & Iron Corp., Denver
- 15 Wheeling Steel Corp., Wheeling, W. Va.
- 16 Geneva Steel Co., Salt Lake City
- 17 Crucible Steel Co. of America, New York
- 18 Pittsburgh Steel Co., Pittsburgh 19 Kaiser Co., Inc., Oakland, Calif.
- 20 Portsmouth Steel Corp., Portsmouth, Ohio
- 21 Lukens Steel Co., Coatesville, Pa.
- 22 Granite City Steel Co., Granite City, III.
- 23 Wisconsin Steel Co., South Chicago, III.
- 24 Columbia Steel Co., San Francisco
- 25 Copperweld Steel Co., Glassport, Pa. 26 Alan Wood Steel Co., Conshohocken, Pa.
- 27 Calif. Cold Rolled Steel Corp., Los Angeles
- 28 Allegheny Ludium Steel Corp., Pittsburgh
- 29 Worth Steel Co., Claymont, Del. 30 Continental Steel Corp., Kokomo, Ind.
- 31 Rotary Electric Steel Co., Detroit
- 32 Laclede Steel Co., St. Louis
- 33 Northwestern Steel & Wire Co., Sterling, III.
- 34 Keystone Steel & Wire Co., Peoria, III.
- 35 Central Iron & Steel Co., Harrisburg, Pa.
- 36 Carpenter Steel Co., Reading, Pa.
- 37 Eastern Stainless Steel Corp., Baltimore
- 38 Washington Steel Corp., Washington, Pa.
- 39 Jessop Steel Co., Washington, Pa. 40 Blair Strip Steel Co., New Castle, Pa.
- 41 Superior Steel Corp., Carnegle, Pa.
- 42 Timken Steel & Tube Div., Canton, Ohio
- 43 Babcock & Wilcox Tube Co., Beaver Falls, Pa.
- 44 Reeves Steel & Mfg. Co., Dover, Ohio
- 45 John A. Roebling's Sons Co., Trenton, N. J.
- 46 Simonds Saw & Steel Co., Fitchburg, Mass.
- 47 McLouth Steel Corp., Detroit
- 48 Cold Metal Products Co., Youngstown
- 49 Thomas Steel Co., Warren, Ohio
- 50 Wilson Steel & Wire Co., Chicago 51 Sweet's Steel Co., Williamsport, Pa.
- 52 Superior Drawn Steel Co., Monaca, Pa.
- 53 Tremont Nail Co., Wareham, Mass.
- 54 Firth Sterling Steel & Carbide Corp., McKees-port, Pa.
- 55 Ingersoll Steel Div., Chicago
- 56 Phoenix Iron & Steel Co., Phoenixville, Pa.
- 57 Fitzsimmons Steel Co., Youngstown
- 58 Stanley Works, New Britain, Conn.
- 59 Universal-Cyclops Steel Corp., Bridgeville, Pa.
- 60 American Cladmetals Co., Carnegie, Pa. 61 Cuyahoga Steel & Wire Co., Cleveland
- 62 Bethlehem Pacific Coast Steel Corp., San
- Francisco
- 63 Follansbee Steel Corp., Pittsburgh 64 Niles Rolling Mill Co., Niles, Ohio
- 65 Atlantic Steel Co., Atlanta
- 66 Acme Steel Co., Chicago
- 67 Joslyn Mfg. & Supply Co., Chicago
- 68 Detroit Steel Corp., Detroit 69 Wyckoff Steel Co., Pittsburgh
- 70 Bliss & Laughlin, Inc., Harvey, III.
- 71 Columbia Steel & Shafting Co., Pittsburgh
- 72 Cumberland Steel Co., Cumberland, Md.
- 73 La Salle Steel Co., Chicago
- 74 Monarch Steel Co., Inc., Indianapolis 75 Empire Steel Co., Mansfield, Ohio
- 76 Mahoning Valley Steel Co., Niles, Ohio
- 77 Oliver Iron & Steel Co., Pittsburgh
- 78 Pittsburgh Screw & Bolt Co., Pittsburgh
- 79 Standard Forgings Corp., Chicago
- 80 Driver Harris Co., Harrison, N. J.
- 81 Detroit Tube & Steel Div., Detroit
- 82 Reliance Div., Eaton Mfg. Co., Massillon, Ohlo
- 83 Sheffield Steel Corp., Kansas City

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0.00

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MERCHANT WIRE PRODUCTS

To the dealer, f.o.b. mill

	Base	Column Pittsburg, Calif.
Standard & coated nails*	106	125
Woven wire fencet	116	139
Fence posts, carloadstt	112	
	113	137
Galvanized barbed wire**		146
Twisted barbless wire	126	

*Pgh., Chi., Duluth; Worcester, 6 col-umns higher; Houston, 8 columns higher; Kansas City, 12 columns higher, † 15½ gage and heavier. **On 80 rod spools, in carloads. †† Duluth, Joliet and Johns-

ao mai	Bo	se per	Pittsburg
Annealed fence w		00 lb	Calif. \$6.10
Annealed, galv. fe			6.55
Cut nails, carload	##	6.75	

Add 30¢ at Worcester; 20¢ at Chicago; ¢ at Sparrows Pt. ‡‡ Less 20¢ to jobbers.

PRODUCING POINTS — Standard, Coated or galvanized nails, woven wire fence, bale ties, and barbed wire: Alabama City, Ala., 4; Atlanta, 65; Aliquippa, Pa. (except bale ties), 5; Bartonville, Ill. (except bale ties), 5; Bartonville, Ill. (except bale ties), 34; Chicago, 4; Donora, Pa., 2; Duluth, 2; Fairfield, Ala., 11; Johnstown, Pa. (except bale ties), 3; Joliet, Ill., 2; Kokomo, Ind., 30; Minnequa, Colo., 14; Monessen, Pa. (except bale ties), 18; Pittsburg, Calif., 24; Portsmouth, Ohio, 20; Rankin, Pa. (except bale ties), 2; Sparrows Point (except bale ties), 2; Sterling, Ill., 33; San Francisco (except nails and woven fence), 14; Torrance, Calif. (nails only), 24; Worcester (nails only), 2; Houston (except bale ties), 83; Kansas City, 83.

Fence posts: Duluth, 2: Johnstown.

Fence posts: Duluth, 2; Johnstown, Pa., 3; Joliet, Ill., 2; Minnequa, Colo., 14; Moline, Ill., 4; Williamsport, Pa., 51.

Cut nails: Wheeling, W. Va., 15; Conshohocken, Pa., 26; Warehame, Mass., 53.

CLAD STEEL

Base prices, cents per pound, f.o.	b. mill
Stainless-carbon Plate	Sheet
No. 304, 20 pct,	
Coatesville, Pa. (21) *26.50	
Washgtn, Pa. (39) •26.50 Claymont, Del. (29) •26.50	
Conshohocken, Pa. (26) New Castle, Ind. (55) . *26.50	*22.50 *24.00
Nickel-carbon	a 1.00
10 pct, Coatesville (26) 27.50	
Inconel-carbon	
10 pct, Coatesville (21) 36.00	
Monel-carbon	
10 pct, Coatesville (21) 29.00	
No. 302 Stainless-copper-	
stainless, Carnegie, Pa. (60)	\$1.40
Aluminized steel sheets, hot	
dip, Butler, Pa. (7)	7.75
No. of the contract of the con	

Includes annealing and pickling, or sandblasting

ELECTRICAL SHEETS

22 gage HR cut lengths toh will

an gage,	-	-			,	-	• •			~		y	**	29		9.		0	0		10000
																	0		231	its	per lb
Armature .						*		*			*					×					†6.45
Electrical .		e				0															†*6.95
Motor			0	0		0			0				0	0	0			0	٠	4	*7.95
Dynamo			0		0							٠					0				8.75
Transformer		7	2			0	0	,	9												9.30
Transformer		6	5							0	0						0				9.85
Transformer		5	8								0										10.55
Transformer		5	2												9					0	11.35

PRODUCING POINTS—Beech bottom, W. Va., 18; Brackenridge, Pa., 28; Foliansbee, W. Va., 63; Granite City, Ill., 22*, add 20¢; Indiana Harbor, Ind., 8†, deduct 25¢; Mansfield, Ohio, 75; Niles, Ohio, 64, 76; Vandergrift, Pa., 1; Warren, Ohio, 4; Zanesville, Ohio, 7†, deduct 25¢.

Numbers after producing points correspond to steel producers. See key on Steel Price page.

BOLTS, NUTS, RIVETS, SET SCREWS

Consumer Prices

(Bolts and nuts f.o.b. mill Pittsburgh, Cleveland, Birmingham or Chicago) Base discount

Machine and Carriage Bolts

	CONL	1885
	Less	
	Case	C.
1/2 in. & smaller x 6 in. & shorter	27	38
9/16 & % in. x 6 in. & shorter	29	40
% in. & larger x 6 in. shorter	26	37
All diam., longer than 6 in	22	34
Lag, all diam over 6 in. & longer	28	39
Lag, all diam x 6 in. & shorter	30	41
Plow bolts	40	_

Nuts, Cold Punched or Hot Pressed

(Hexagon or Square)

1/2 in. and smaller											25	37
9/16 and % in											23	31
% to 1 1/2 in. inclusi	3	74	3		0	0			0		23	35
1% in, and larger	w				į.			į.		į.	16	25

Semifinished Hexagon Nuts

(Less case lots)

				Pc	ist		
				Reg	Hvy	Lt	
½ in. and smaller				41	35	41	
9/16 & 5 in				36	30	36	
% to 1 % in				31	27	33	
1% in. and larger				21	17		
In full case lots,	1	5	pe	et add	itional		
count.			-				

Stove Bolts

Pct Off List
Packaged, steel, plain finish 63½ and 10
Packaged, plated finish ... 50 and 10
Bulk, plain finish** 72*
*Discounts apply to bulk shipments in
not less than 15,000 pieces of a size and
kind where length is 3-in. and shorter;
5000 pieces for lengths longer than 3-in.
For lesser quantities, packaged price appiles.

plies.
**Zinc, Parkerized, cadmium or nickel
plated finishes add 6¢ per lb net. For
black oil finish, add 2¢ per lb net.

Large Rivets

	(1/2 in.		larger)
	Cleveland, m, Lebanon,	Chi-	

Small Rivets

1

			(7	/1	6	in.	. 1							ller)
F.o.b.	Pittsburgh,	6	Cle	3.6	el	a	nd.		C	h	ic	1	U	O.	List
	no in orbon ma												-		43

Cap and Set Screws

(In bulk) Pct Off	List
Hexagon head cap screws, coarse or	
fine thread, 1/4 in. thru 5/4 in. x 6	
in., SAE 1020, bright	60
III., SAE 1020, Dright	00
1/4 in. through 1/4 in. x 6 in. and	
shorter (SAE 1035) heat treated	54
Milled studs	28
Flat head cap screws, listed sizes	24
Fillister head cap, listed sizes	43

C-R SPRING STEEL

0.26	to	0.40	carbo	n .									4.15
0.41	to	0.60	carbo	n .					×				5.95
0.61	to	0.80	carbo	n .	. *							×	6.55
0.81	to	1.05	carbo	n .									8.50
1.06	to	1.35	carbo	n .					0				10.80

LAKE SUPERIOR ORES

(51.50% Fe; natural content, delivered

	lower			-			P			ross	
Old rang											
Old rang											
Mesabi, l											7.3
Mesabi, 1											7.2
High pho	sphorus							* 4			7.2
After	Dec. 31,	194	18,		in	er	et	LSE	8	or	de

creases in Upper Lake freight, dock and handling charges and taxes thereon to be for the buyers' account.

RAILS, TRACK SUPPLIES

F.o.b. mill

Stand	ard r	ails.		1	00	,	11)	8	un	d	h	e	a	V	ie	er			
No.	1 qui	ality	,	p	el	P	1	01	•	11	b								\$3.	40
Joint	bars.	per	1	u	10	- 1	b			9 6				٠					4.	40
Light	rails,	per		1	00		lb						0						3,	75
		-																	Pr	
														0	16	91	t:	8	per	10
Track	spik	es†			0 1			9											. 5.	60
Axles																				
Screw	spik	es .													0				. 8.	60
Tie p	lates	!																2	4.	20
Tie p																				
Track	bolts	, un	t	re	a	te	ed	ĺ											. 8.	85
Track	bolt	s, l	ne	a	t	1	tr	e .	a.	te	ed.		ti	0	0	r	a	11	. 9.	10

* Seattle, add 30¢. † Kansas City, 5.85¢.

PRODUCING POINTS—Standard rails: Bessemer, Pa., 1; Ensley, Ala., 11; Gary, 1; Indiana Harbor, Ind., 8; Lackawanna, N. Y., 3; Minnequa, Colo., 14; Steelton, Pa., 3.

Light rails: All the above except Indiana Harbor and Steelton, plus Fairfield, Ala., 11; Johnstown, Pa., 3; Minnequa, Colo., 14.

Joint bars: Bessemer, Pa., 1; Fairfield, Ala., 11; Indiana Harbor, Ind., 8; Joliet, Ill., 1; Lackawanna, N. Y., 3; Steelton, Pa., 3; Minnequa, Colo., 14.

Track spikes: Fairfield, Ala., 11; Indiana Harbor, Ind., 6, 8; Lebanon, Pa., 3; Minnequa, Colo., 14; Pittsburgh, 5; Chicago, 4; Struthers, Ohlo, 6; Youngstown, 4.

Track bolts: Fairfield, Ala., 11; Lebanon, Pa., 3; Minnequa, Colo., 14; Pittsburgh, 77, 78.

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burgh, 77, 78.

Axles: Fairfield, Ala., 11; Gary, 1; Indiana Harbor, Ind., 79; Johnstown, Pa., 3; McKees Rocks, Pa., 1.

Tie plates: Fairfield, Ala., 11; Gary, 1; Indiana Harbor, Ind., 8; Lackawanna, N. Y., 3; Pittsburg, Calif., 24; Pittsburgh, 4; Seattle, 62; Steelton, Pa., 3; Torrance, Calif., 24; Minnequa, Colo., 14.

TOOL STEEL

F.o.b. mill

w	Cr	v			M	0		(20)		per lb
18	4	1			Commission			-	_			\$1.00
18	4	1			-				5			\$1.565
18	4	2			_			_	_			\$1.13
1.5	4	1.5	5		8			_	_			71.5¢
6	4	2			6			-	_	,		76.5¢
High-	carbon-c	hrom	iu	ım								57.54
	ardened											
Specia	al carbon							 	0	0	۰	29.5¢
	carbon											
Regul	ar carbo	n			* ×		×	 				21¢

Warehouse prices on and east of Mississippi are 2½¢ per lb higher. West of Mississippi, 4½¢ higher.

COKE

Furnace, beehive (f.o.b. oven) Net Ton Connellsville, Pa \$13.50 to \$14.50
Foundry, beehive (f.o.b. oven)
Connellsville, Pa \$15.50 to \$16.00
Foundry, oven coke Buffalo, del'd\$20.90
Chicago, f.o.b
Detroit, f.o.b
New England, del'd
Philadelphia, f.o.b 20.45
Swedeland, Pa., f.o.b 20.40
Plainesville, Ohio, f.o.b 20.90
Erie, del'd
Cincinnati, del'd
St. Paul, f.o.b 23.50
St. Louis, del'd 21.60
Birmingham, del'd 18.75

FLUORSPAR

Washed gr				
Rosiclare, Ill	. Bas	se price,	per ton	net
Effective Car	con	tent:	-	
70% or more			1	37.00
60% or less				34.00

S

33.40 4.40 3.75 e Price s per lb . 5.60

.. 8.60 4.20 4.20 . 8.85 11-.. 9.10

d rails: Gary, wanna, teelton,

ept Inmequa,

Joliet, teelton,

1; In-n, Pa., gh, 5; oungs-

; Leb-1 ; In-n, Pa.,

ary, 1; wanna, sburgh, rrance,

Pase per lb \$1.00 \$1.565

\$1.13 76.5€ 57.54 32¢ 29.54

24.5€ 21¢ f Mis-Test of

\$16.00

\$20.90 20.40 19.40 22.70 22.00 20.45 20.40 21.04 22.62 21.71 23.50 18.75

1950

STAINLESS STEELS

Base prices, in cents per pound,

Product	301	302	303	304	316	321	347	410	416	430
Ingels, rerailing	12.75	13.50	15.00	14.50	22.75	18.25	20.00	11.25	13.75	11.5
Stabe, billets, rerolling	17.00	18.25	20.25	19.25	30.25	24.50	28.75	15.80	18.50	15.2
Forg. discs, die blocks, rings	30.50	30.50	33.00	32.00	49.00	38.50	41.00	24.50	25.00	28.0
Billiets, forging	24.25	24.25	26.25	25.50	39.00	29.80	32.75	19.50	20.00	20.0
Bars, wire, structurals	28.50	28.50	31.00	30.00	48.00	34.00	38.50	23.00	23.80	23.5
Plates	32.00	32.00	34.00	34.00	80.50	39.50	44.00	26.00	26.50- 27.00	28.5
Sheeta	37.50	37.50	39.50	39.50	53.00	45.50	80.00	33.00	33.50	35.5
Strip, het-rolled	24.25	25.75	30.00	27.78	46.00	34.50	38.75	21.25	28.00	21.7
Strip, cold-rolled	30.50	33.00	36.50	35.00	55.00	44.50	46.50	27.00	33.50	27.8

Numbers correspond to producers. See Key on Steel Price Page.

Stainless Steel Producing Points—Sheets: Midland, Pa., 17; Brackenridge, Pa., 28; Butler, Pa., 7; McKeesport, Pa., 1; Washington, Pa., 38,39; Baltimore, 37; Middletown, Ohio, 7; Massillon, Ohio, 4; Gary, 1; Bridgeville, Pa., 59; New Castle, Ind., 55; Lockport, N. Y., 46.

Strip: Midland, Pa., 17; Cleveland, 2; Carnegie, Pa., 41; McKeesport, Pa., 54; Reading, Pa., 36; Washington, Pa., 38; W. Leechburg, Pa., 28; Bridgeville, Pa., 59; Detroit, 47; Massillon, Canton, Ohio, 4; Middletown, Ohio, 7; Harrison, N. J., 49; Youngstown, 48; Lockport, N. Y., 46; New Britain, Conn., 58; Sharon, 13; Butler, Pa., 7; Bars: Baltimore, 7; Duquesne, Pa., 1; Munhall, Pa., 1; Reading, Pa., 36; Titusville, Pa., 59; Washington, Pa., 39; McKeesport, Pa., 1, 54; Bridgeville, Pa., 59; Dunkirk, N. Y., 28; Massillon, Ohio, 4; Chicago, 1, 67; Syracuse, N. Y., 17; Watervliet, N. Y., 28; Waukegan, Ill., 2; Massillon, Ohio, 4; McKeesport, Pa., 54; Bridgeport, Conn., 44; Chicago, 67; Trenton, N. J., 45; Harrison, N. J., 80; Baltimore, 7; Dunkirk, 28. Structurals: Baltimore, 7; Massillon, Ohio, 4; McKeesport, Pa., 54; Bridgeport, Conn., 44.

Plates: Brackenridge, Pa., 28; Butler, Pa., 7; Chicago, 1; Munhall, Pa., 1; Midland, Pa., 17; New Castle, Ind., 55; Lockport, N. Y., 46; Middletown, 7; Washington, Pa., 39; Cleveland, Massillon, 4

Forged discs, die blocks, rings: Pittsburgh, 1, 17; Syracuse, 17; Ferndale, Mich., 28.

Forging billets: Midland, Pa., 17; Baltimore, 7; Washington, Pa., 39; McKeesport, 54; Massillon, Canton, Ohio, 4; Watervliet, 28; Pittsburgh, Chicago, 1.

REFRACTORIES (F.o.b. works)

Fire Clay Brick	Carloads, Per 1000
First quality, Ill., Ky.	, Md., Mo., Ohio, Pa., add \$5) \$86.00
No. 1 Ohio	80.00
No. 2 Ohio	72.00
Ground fire clay, net cept Salina, Pa., ad	d \$1.50) 14.00

Silica Brick

Mt. Union, Pa., Ensley, Ala\$86.00	Ü
Childs, Pa	ð
Hays, Pa	
Chicago District 95.00	
Western, Utah and Calif	
	v
Super Duty, Hays, Pa., Athens,	_
Tex., Chicago	J
Silica cement, net ton, bulk, East-	
ern (except Hays, Pa.) 15.00	ð
Silica cement, net ton, bulk, Hays,	
Pa 17.00	a
	v
Silica cement, net ton, bulk, Ensley,	
Ala	Э
Silica cement, net ton, bulk, Chi-	
cago District 16.00	ñ
Silica cement, net ton, bulk, Utah	
and Calif	n
and Calif 22.50	J

Chrome Brick Per Net Ton Standard chemically bonded, balt., Chester\$69.00

Standard, H	Baltimore							\$91.00
Chemically	bonded,	Baltin	mor	e	4	×	ě	80.00

Grain Magnesite Std. %-in. grains Domestic, f.o.b. Baltimore, in bulk, fines removed ... \$56.00 to \$56.50 Domestic, f.o.b. Chewelah, Wash... in bulk with fines ... 30.50 to 31.00 in sacks with fines ... 35.00 to 35.50

Dead Burned Dolomite

F.o.b. producing points in Pennsylvania, West Virginia and Ohio, per net ton, bulk, Midwest, add 10¢; Missouri Valley, add 20¢...\$12.25

METAL POWDERS

Per pound, f.o.b. shipping point, in ton lots, for minus 100 mesh.

Swedish sponge iron c.i.f.

New York, ocean bags... 7.4¢ to 9.0¢

Domestic sponge iron, 98+%	
Fe, carload lots	9.0¢ to 15.0¢
Electrolytic_iron, annealed,	
99.5+% Fe	31.5¢ to 39.5¢
Electrolytic iron unannealed,	
minus 325 mesh, 99 + % Fe	48.5¢
Hydrogen reduced iron, mi-	
nus 300 mesh, 98+% Fe	63.0¢ to 80.0¢
Carbonyl iron, size 5 to 10	
microns, 98%, 99.8+% Fe	90.0¢ to \$1.75
Aluminum	
Antimony	42.53¢
Brass, 10 ton lots2	3.25¢ to 26.75¢
Copper, electrolytic	28.625€
Copper, reduced	20.00€
Cadmium	\$2.40
Chromium, electrolytic, 99%	
min	\$3.50
Lead	18.50¢
Manganese	55.00€
Molybdenum, 99%	\$2.65
Nickel, unannealed	61.00€
Nickel, spherical, minus 30	
mesh, unannealed	68.00¢
Silicon	34.00€
Solder powder 8.5¢ p	lus metal cost
Stainless steel, 302	75.00€
Tin	87.50€
Stainless steel, 302 Tin Tungsten, 99%	\$2.90
Zinc, 10 ton lots1!	0.50¢ to 18.25¢

ELECTRODES

Cents per lb, f.o.b. plant, threaded electrodes with nipples, unboxed

Diam. In in.	Length in in.	Cents Per Ib
	GRAPHITE	
17, 18, 20 8 to 16 7 6 4, 5 3 2 1/2	60, 72 48, 60, 72 48, 60 48, 60 40 40 24, 30 24, 30	16.00¢ 16.50¢ 17.75¢ 19.00¢ 19.50¢ 20.50¢ 21.00¢ 23.00¢
	CARBON	
40 35 30 24 17 to 20 14 10, 12	100, 110 65, 110 65, 84, 110 72 to 104 84, 90 60, 72 60	7.50¢ 7.50¢ 7.50¢ 7.50¢ 8.00¢ 8.25¢ 8.50¢

PIPE AND TUBING

Base discounts, f.o.b. mills Base price, about \$200.00 per net ton

Standard, T & C

Jiun			•	-	-			
Steel, buttweld ½-in. % -in. 1-in	40 ½ 43 ½ 46 ¼ 47 ¼ 47 ½ 48	to to to to	38 41 44 44 45 45	经	24 28 31 31 1/4 32 32 1/4 33 1/4	to to to to	29 29 30 30	1/4
Steel, lapweld 2-in	41 44		37 40 40		23 ½ 25 ¼ 28 ½	to	24	猛
Steel, seamless 2-in					20 ½ 23 ½ 25 ½			
Wrought Iron, ½-in. ¾-in. 1 & 1¼-in. 1 ½-in. 2-in.		++++	-26 -16	75.75.75.75.75.75.75.75.75.75.75.75.75.7		+	53 42 33 29 29	1/4
Wrought Iron, 2-in. 2½ to 3½-in. 4-in. 4½ to 8-in. 9 to 12-in.		++++	-13 -11 - 6 - 8 -18			+	37 32 26 28 37	144

Extra Strong, Plain Ends

Steel,	buttweld						
½-in. ¾-in. 1-in. 1¼-in. 1½-in. 2-in.	3-in	39 14 43 14 45 14 46 14 47 14	to 4 to 4 to 4	1 1 1/4 13 1/4 14 1/4 15	24 1/4 28 1/4 31 1/4 32 1/4 33 1/4 33 1/4	to to to to	26 ½ 29 ½ 30 30 ½ 32
Steel.	lapweld						
2-in 2 1/2 to	3-in 6-in	37 42 45 1/4	to a	16 10 11 1/2	22 1/4 27 1/4 31	to to	21 ½ 25 ½ 29
Steel.	seamless						
2-in. 2 1/2 to	3-in 6-in	35 39			20 1/2 24 1/2 28		
Wroug	ht Iron,	butt	wel	d			
1/2 -in. 1/4 -in.			#			#	47 40 29
Wroug	ht Iron,	lapw	eld				
2-in 2 ½ to 4 ½ to 7 & 8-9 to 1	4-in 6-in		++++++	10 1/4 5 st 11 1/4		+	21 ½ 29 ½
LOL	threads of	may, t	Jule	weld,	HEDW	Dis	at II

For threads only, buttweld, lapweld and seamless pipe, one point higher discount (lower price) applies. For plain ends, buttweld, lapweld and seamless pipe 3-in. and smaller, three points higher discount (lower price) applies, while for lapweld and seamless 3½-in. and larger four points higher discount (lower price) applies. On buttweld and lapweld steel pipe, jobbers are granted a discount of 5 pct. *Fontana, Calif., deduct 11 points from figures in left columns.

BOILER TUBES

Seamless steel and electric welded com-mercial boiler tubes and locomotive tubes, minimum wall. Prices per 100 ft at mill in carload lots, cut lengths 10 to 24 ft inclu-

OD	gage	Sear	nless	Electric	Weld
in in.	BWG	H.R.	C.R.	H.R.	C.D.
2	13	\$20.61	\$24,24	\$19.99	\$23.51
2 1/2	12	27.71	32.58	26.88	31.60
3	12	30.82	36.27	29.90	35.18
3 1/4	11	38.52	45.38	37.36	43.99
4	10	47.82	56.25	46.39	54.56

CAST IRON WATER PIPE

6 to 20-in., del'd Chicago \$95.70
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
6 to 24-in., del'd N. Y \$92.50 to 97.40
6 to 24-in., Birmingham 82.50
to be a series of the series o
6-in, and larger, f.o.b. cars, San
Francisco, Los Angeles, for all
rail shipment; rail and water
shipment less 109.30
Simplified toob
Class "A" and gas pipe, \$5 extra; 4-in.
pine is \$5 a ton above 6-in

WAREHOUSE PRICES

(Metropolitan area delivery, add 20c to base price except Birmingham,

		SHEETS		STR	RIP	PLATES	SHAPES	BARS			ALLOY	BARS	
CITIES	Hot- Rolled	Cold- Rolled (15 gage)	Galvanized (10 gage)	Mol- Relical	Cold- Rolled		Standard Structural	Het- Relied	Cold- Finished	Hot- Rolled, A 4615 As-rolled	Hot- Rolled, A 4140-50 Ann.	Cold- Drawn, A 4615 As-rolled	Cold- Drawn, A 4140-50 Ann.
Daltimers	5.05	6.24-	6.46-	8.60-		5.20-	5.49	5.49-	6.19		10.08		***1
Birmingham*	5.0510	8.44 ¹ 5.80	6.46 ² 6.15 ⁷	5.80 ¹¹ 5.10 ¹⁰		5.6411	5.05	5.4911 5.0010	6.73	****	****	****	****
Boston	5.73	8.4820_	6.79-	6.78	6.90-	5.88	5.55	5.60	6.02-	9.70-	9.90-	11.15	11.48
Buffalo	5.05	6.85 5.80	7.24 6.80	5.41	6.95 7.27	5.45	5.15	5.05	6.58 5.65	9.97	10.37 9.90	11.05	11.35
Chicago	5.05	5.80	6.70	5.10	5.45-	5.20	5.05	5.00	5.65	9.25	9.55	10.70	11.00
Cincinnati*	5.32-	5.80-	6.29	5.49	8.18	5.59	5.44	5.39	6.10	9.60	8.90	11.05	11.35
Cleveland	5.40	6, 15 5, 80	6.95	5.24	6.35	5.32	5.17	8.12	5.75	9.36	9.66	10.81	11.11
Detroit	5.33	8.08	7.09	5.49	8.27-	5.59	5.44	5.39	6.03	9.58	9.86	11.01	11.31
Houston	5.75	0.00	1	5.45	8.58	6.00	8,98		7.800	10.45	10.60		12.10
Indianapolis					7.38		0.00		1.00				
Kansas City	5,65	6,40	7,30	5,70	8.95	5.80	5,65	5.60	6.35				
Los Angeles*	5,8015	7,0015	7.452	5.85	7.35-	5.80	5.70	5.80	7.85	10.05	10.20	11.70	12,10
Memphis	5,93	8.68	7,40	5,98	7.85 ¹⁶ 6.80	6.08	5.93	5.68	7.00	10.00	10.20		12.10
Milwaukee	5.19	5.94	6.84	5.24	6.32	5.34		5,14	5.89	9.39	9.69	10.84	11.14
New Orleans*	5,501	6,861		5.551	6.901	5.65	5.551	5,551	6.75				1
New York.	5.55-	6.80	6.90-	5.84	8.765	5.70			6.44	9,60	9.90	11.05	11.35
Norfolk	5.65	6.64	7.00				5.45	5.65					
Omaha	6.10	7.60		6.30		6.15	6.20	8.15	7.20	• • • •	****	****	****
												10.00	****
Philadelphia*	5.30	6.20	6.70	5.65	6.29	5.45	5.25	5.50	6.31	9.35	9.65	10.80	11.10
Httsburgh	8.08	5.80	6.70	5.20	8.00	5.20	5.05	5.00	5.75	9.25	9.55	10.70	11.00
Portland										****	****	****	****
alt Lake City	5.85	6.70	8.75	7.45	8.75	6.103	5.90	7.358	8.75			X . * *	****
an Francisco	6.2511	7.602	7.502	8.7511	8.25	6.1511	6.00	6.1511	7.80			****	****
eattle	6.704	8.152	8,202-	7.354		6.354	6.204-	6.354	8.5014	****	10.6018.		13.60 ¹⁸
t. Louis.	5.38	6.13	8.35 ² 7.03	5.43	6.88-	5.53	6.25 ⁴ 5.38	5.33-	6.08	9.58	9.88	11.03	11.33
t. Paul					7.54 8.82			5.35					****

BASE QUANTITIES: (Standard unless otherwise keyed on prices).

Hot-rolled sheets and strip, hot rolled bars and bar shapes, structural shapes, plate, galvanized sheets and cold-rolled sheets: 2009 to 9999 lb. Cold-finished bars: 1000 lb or over. Alloy bars: 1000 to

All HR products may be combined to determine quantity bracket.

All galvanized sheets may be combined to determine quantity bracket. CR sheets may not be combined with each other or with galv. sheets to determine quantity bracket.

Exceptions:

(1) 400 to 1499 lb; (2) 450 to 1499 lb; (3) 300 to 4999 lb; (4) 300 to 9999 lb; (5) 2000 to 5999 lb; (6) 1000 lb and over; (7) 500 to 1499 lb; (8) 400 lb and over; (9) 500 to 1999 lb; (10) 500 to 9999 lb; (11) 400 to 3999 lb; (12) 450 to 3749 lb; (13) 400 to 1999 lb; (14) 1500 lb and over; (15) 1000 to 9999 lb; (16) 6000 lb and over; (17) up to 1999 lb; (18) 1000 to 1499 lb; (19) 1500 to 3499 lb; (20) CR sheets may be combined for quantity.

PIG IRON PRICES

Dollars per gross ton. Delivered prices do not include \$ pct tax on freight.

PRODUCING POINT PRICES						DELIVERED	PRICES (BASE G	RADES)				
Producing Point	Basic	No. 2 Foundry	Malle- able	Besse- mer	Low Phos.	Censuming Point	Producing Point	Rail Freight Rate	Basic	No. 2 Foundry	Maile- able	Besse- mer	Low
	46.00 38.86- 41.88 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00 46.00	48,50 (39,38- 42,38 46,50 46,50 46,50 46,50 46,50 48,40 48,50 46,50 48,50	49.00 47.00 46.50 46.50 46.50 51.00 48.90 48.50 49.00 49.00	49.50 47.00 47.00 47.00 47.00 47.00 47.00 49.50 49.50 47.00	\$1.00 \$4.00	Boston Booton Brooklyn Gincinnati Jersey City Los Angeles Mansfield Philadelphia Philadelphia Philadelphia Philadelphia Rochester San Francisco Seattle St. Louis Syracuse	Everett Steeiton Bethlehem Birmingham Bethlehem Geneva-Ironton Cleveland-Toledo Bethlehem Swedeland Steeiton Buffalo Geneva-Ironton Geneva-Ironton Geneva-Ironton Geneva-Ironton Geneva-Ironton Geneva-Ironton Geneva-Ironton Buffalo	\$0.50 Arb. 6.90 4.29 6.70 2.63 7.70 3.33 2.39 1.44 3.09 2.63 7.70 7.70 0.75 Arb. 3.58	46.58 53.70 49.33 50.39 49.44 48.63 53.70 48.65 49.58	50.50 52.79 47.08 51.13 54.20 49.63 50.89 49.94 49.13 54.20 54.20 54.20 59.08	51.00 53.29 51.63 49.83 51.39 50.44 49.63 49.65 50.58	53.79 52.13 50.33 51.89 50.94	60.90 54.33 57.00

Producing point prices are subject to switching charges; silicon differential (not to exceed 50c per ton for each 0.25 pct silicon content in excess of base grade which is 1.75 to 2.25 pct for foundry iron); phosphorus differentials, a reduction of 38c per ton for phosphorus content of 0.70 pct and over manganese differentials, a charge not to exceed 50c per ton for each 0.50 pct manganese

content in excess of 1.00 pct. \$2 per ton extra may be charged for 0.5 to 0.75 pct nickel content and \$1 per ton extra for each additional 0.25 pct nickel.

Silvery iron (blast furnace) silicon 6.01 to 6.50 pct. C/L per g.t., f.o.b. Jackson, Ohio—\$57.00; f.o.b. Buffalo. \$60.75. Add \$1.00 per ton for each additional 0.50 pct Si up to 17 pct.

Add 50c per ton for each 0.50 pet Mn over 1.00 pet. Add \$1.00 per ton for 0.75 pet or more P. Bessemer ferrosilicon prices are \$1.00 per ton above silvery fron prices of comparable analysis.

Charcoal pig fron base price for low phosphorus \$60.00 per gross ton, f.o.b. Lyle, Tenn. Delivered Chicago. \$68,56, High phosphorus charcoal pix iron is not being produced.

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de C. T.

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p

ham, 15c),

Cold-rawn, 140-50 Ann.

1,45 1.35 .00 1.35 1.11 1.31 2.10

2.10

1.14

.35

... 1.10 .00

3.60¹⁸-1.60¹⁵

4999 1000 over; 3999 1500 and (19) d for

0.90

4.33 7.09

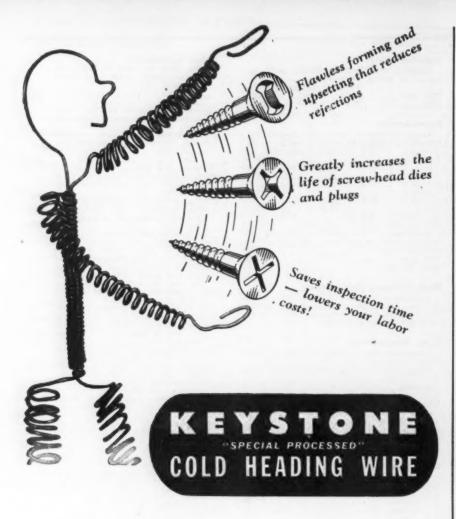
950

FERROALLOYS

FERROALLOYS
Ferromanganese
78-82% Mn. maximum contact base price, gross ton, lump size.
F.o.b. Birmingham \$174
Welland, Ont. \$172 F.o.b. Johnstown, Pa. \$174 F.o.b. Sheridan, Pa. \$174 F.o.b. Etna, Clairton, Pa. \$175 F.o.b. Etna, Clairton, Pa. \$175 \$2.00 for each 1% above \$2% Mn, penalty, \$2.15 for each 1% below 78%. Briquets—Cents per pound of briquet, delivered, 66% contained Mn.
F.o.b. Sheridan, Pa \$172
F.o.b. Etna, Clairton, Pa \$175 \$2.00 for each 1% above 82% Mn
penalty, \$2.15 for each 1% below 78%.
Carload, bulk
Less ton lots 12.95
Spiegeleisen
Contract prices gross ton, lump, f.o.b
3% max. Si 3% max. Si
16-19% Mn 19-21% Mn 3% max. Si 3% max. Si Palmerton, Pa. \$64.00 \$65.00 \$66.00
Manganese Metal
Contract basis, 2 in. x down, cents per
pound of metal, delivered. 96% min. Mn. 0.2% max. C. 1% max.
96% min. Mn, 0.2% max. C, 1% max. Si, 2% max. Fe. Carload, packed
Carload, packed
Electrolysic Manganese
F.o.b. Knoxville, Tenn., freight allowed east of Mississippi, cents per pound.
Carloads 28
Ton lots
Low-Carbon Manganese
Contract price, cents per pound Mn con-
tained, lump size, delivered.
0.07% max. C, 0.06% Carloads Ton Less
0.00% max. C, 0.06% P, 90% Mn 25.25 27.10 28.30 0.10% max. C 24.75 26.60 27.80 0.15% max. C 24.25 26.10 27.30
0.15% max, C 24.25 26.10 27.30
0.50% max. C 23.25 25.10 26.30
0.75% max. C, 7.00% max. Si 20.25 22.10 23.30
Silicomanganese
Contract basis, lump size, cents per pound of metal, delivered, 65-68% Mn,
pound of metal, delivered, $65-68\%$ Mn, $18-20\%$ Si, 1.5% max. C. For 2% max. C, deduct 0.2ϕ .
deduct 0.2¢. Carload bulk
Ton lots
delivered, per in or priquet Iv.av
Ton lots
Si 14.01 to 14.50 pct. f.o.b. Keokuk.
Iowa, or Wenatchee, Wash., \$77.00 gross
Si 15.01 to 15.50 pct, f.o.b. Niagara Falls,
Si 14.01 to 14.50 pct, f.o.b. Keokuk, Iowa, or Wenatchee, Wash., \$77.00 gross ton, freight allowed to normal trade area; Si 15.01 to 15.50 pct, f.o.b. Niagara Falls, N. Y., \$73.50. Add \$1.00 per ton for each additional 0.50% Si up to and including 18%. Add \$1.00 for each 0.50% Mn over 1%.
18%. Add \$1.00 for each 0.50% Mn over 1%.
Silicon Metal Contract price, cents per pound con-
tained Si, lump size, delivered, for ton lots
packed. 96% Si, 2% Fe 20.70
97% Si, 1% Fe 21.10
Silicon Briquets
Contract price, cents per pound of briquet, bulk, delivered, 40% Si, 1 lb Si
oriquets.
Carload, bulk
Less ton lots 8.80
Electric Ferrosilicon
Contract price, cents per pound contained Si, lump size, bulk, in carloads,
delivered.
25% Si
75% SI 13.50
85% Sl

CES —
Calcium Metal Eastern zone contract prices, cents per pound of metal, delivered.
Cast Turnings Distilled Ton lots \$2.05
Ferrochrome Contract prices, cents per pound, contained Cr, lump size, bulk, in carloads, delivered. (65-72% Cr. 2% max. Si) 0.06% C 28.75 0.10% C 28.25 0.15% C 28.00 0.20% C 27.75 0.50% C 27.50 1.00% C 27.25 2.00% C 27.25 2.00% C 27.20 65-69% Cr, 4-9% C 20.50 62-66% Cr, 4-6% C, 6-9% Si 21.35 Briquets — Contract price, cents per pound of briquet, delivered, 60% chromium. Carload bulk 13.75 Ton lots 15.25 Less ton lots 16.15
High-Nitrogen Ferrochrome Low-carbon type: 67-72% Cr, 0.75% N. Add 5¢ per lb to regular low carbon ferrochrome price schedule. Add 5¢ for each additional 0.25% N.
Contract price, cents per pound chromium contained, lump size, delivered. High carbon type: 60-65% Cr, 4-6% Si, 4-6% Mn, 4-6% C. Carloads
Less ton lots 31.85 Chromium Metal Contract prices, per 1b chromium contained packed, delivered, ton lots, 97% min. Cr. 1% max. Fe. 0.20% max. C \$1.09 0.50% max. C 1.05 9.00 min. C 1.04
Colcium-Silicon Contract price per lb of alloy, lump, delivered. 30-33% Ca, 60-65% Si, 3.00% max. Fe. Carloads 17.90 Ton lots 21.00 Less ton lots 22.50
Calcium-Manganese—Silicon Contract prices, cents per 1b of alloy. lump, delivered. 16-20% Ca, 14-18% Mn, 53-59% Sl. Carloads
Alloy 8: 50-50% Cr. 4-5% Mh, 15.50-6.00% C. ### Ton lots
St. Louis. V-5: 38-42% Cr, 17-19% Si, 8-11% Mn. Ton lots
SMZ Contract price, cents per pound of alloy, delivered. 60-65% Si, 5-7% Mn, 5-7% Zr, 20% Fe, ½ In. x 12 mesh. Ton lots 17.25 Less ton lots 18.50

Other Ferreslless	
Other Ferroalloys Alsifer, 20% Al, 40% Si, 40% Fe, contract basis, f.o.b. Suspension	
contract basis, f.o.b. Suspension Bridge, N. Y.	
Ton lots	7.65¢ 9.05¢
Langeloth, Pa., per pound con-	96¢
Ferrocolumbium, 50-60% contract	
Ton lots Less ton lots	\$2.90 2.95
Langeloth, Pa., per pound contained Mo.	\$1.13
basis, delivered, per pound contained Cb. Ton lots Less ton lots Ferromolybdenum, 55-75%, f.o.b. Langeloth, Pa., per pound contained Mo. Ferrophosphorus, electrolytic, 23-26%, carlots, f.o.b. Siglo, Mt. Pleasant, Tenn., \$3 unitage, per gross ton	1
gross ton	\$65.00 75.00
gross ton 10 tons to less carload. Ferrotitanium, 40%, regular grade, 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed east of Missis-	
sippl and north of Baltimore, ton lots, per lb contained Ti	\$1.28
lots, per lb contained Ti Ferrotitanium, 25%, low carbon, 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed east of Missis-	
lots, per lb contained Ti	\$1.40
Ferrotitanium, 15 to 19%, high car-	1.45
reight allowed east of Mississippi and north of Baltimore, ton lots, per lb contained Ti Less ton lots Ferrotitanium, 15 to 19%, high carbon, f.o.b. Niagara Falls, N. Y., freight allowed east of Mississippi and north of Baltimore, carloads per net ton	
Ferrotungsten, standard, lump or	160.00
contained W. 5 ton lots, de-	
Ferrocanadium, 35-55%, contract	\$2.25
basis, delivered, per pound, con- tained V.	
Openhearth	\$2.90 3.00
High speed steel (Primos)	3.10
per lb contained Mo, f.o.b. Lange-	95€
bags, f.o.b. Washington, Pa.,	94¢
Crucible High speed steel (Primos). Molybdic oxide, briquets or cans, per lb contained Mo, f.o.b. Langeloth, Pa. bags, f.o.b. Washington, Pa., Langeloth, Pa. Simanal, 20% Si, 20% Mn, 20% Al, contract basis, f.o.b. Philo. Ohio, freight allowed, per pound Carload, bulk, lump	214
Carload, bulk, lump Ton lots, bulk, lump	
Ton lots, packed, lump Less ton lots, lump Vanadium pentoxide, 88-92%	11.75¢ 12.25¢
Vanadium pentoxide, 88-92% V ₂ O ₅ contract basis, per pound	12.200
contained V ₂ O ₅	\$1.20
f.o.b. plant, freight allowed, per pound of alloy. Ton lots	21.00¢
Zirconium, 12-15%, contract basis, lump, delivered, per ib of alloy.	6.60∉
Carload, bulk	
Borosil, f.o.b. Philo, Ohio, freight allowed, B 3-4%, Si 40-45%, per	der.
lb contained B	\$4.25
Less ton lots, per pound	45¢ 50¢
Contract prices, per lb of alloy, Borosil, f.o.b. Philo, Ohio, freight allowed, B 3-4%, Si 40-45%, per lb contained B Bortam, f.ob. Niagara Falls Ton lots, per pound Less ton lots, per pound Carbortam, f.ob. Suspension Bridge, N. Y.; freight allowed. Ti 15-18%, B 1.00-1.50%, Si 2.5- 3.0%, Al 1.0-2.0%. Ton lots, per pound	
Ton lots, per pound Ferroboron, 17.50% min. B, 1.50 Si, 0.50% max. Al, 0.50% max. x D. Ton lots F.o.b. Wash., Pa.; 100 lb and	8.625¢ % max. C, 1 in. \$1.20
F.o.b. Wash., Pa.; 100 lb and over	75
Over 10 to 14% B. 14 to 19% B. 19% min. B. Grainal, f.o.b. Bridgeville. Pa. freight allowed, 100 lb and over. No. 1 No. 6 No. 79 Manganese—Boron 75.00% Mn. B, 5% max. Fe, I.50% max. Si max. C. 2 in. x D, delivered. Ton lots Less ton lots	1.20 1.50
No. 1	93€
No. 79	45¢
Manganese—Boron 75.00% Mn. B, 5% max. Fe, 1.50% max. Si max. C, 2 in. x D, delivered.	15-20%
Ton lots Less ton lots Nickel—Boron 15-18% B, 1.00% n 1.50% max. Sl, 0.50% max. C, max. Fe, balance Ni, delivered. Less ton lots	\$1.67 1.79 nax. Al,
max. Fe, balance Ni, delivered.	\$1.80
Less ton lots	



For recessed heads, Keystone's new special-process wire delivers the desired upsetting and die forming qualities with such a high degree of uniformity that finished product rejections are practically eliminated . . . individual inspection of screws is no longer necessary . . . die and plug life are often more than doubled. This new wire effects considerable savings in the production of Phillips head, clutch head and cross recessed head screws.

Keystone is prepared to help solve any of your industrial wire problems. If special treatment is called for, Keystone's metallurgical research and testing facilities are available to supply the answers. We welcome your inquiry.

STEEL & WIRE CO.

Special Analysis Wire, Setting New Standards of Performance

From Agentroduces

Continued from Page 23

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Jan

Fred J. Drewes has been named foil division manager of the KAISER ALUMINUM & CHEMICAL CORP. He formerly held the position of works manager at the company's Permanente, California, foil plant, and will continue to make his head-quarters there.



WALTER F. MUNFORD, vice president in charge of operations, American Steel & Wire Co., whose appointment was announced recently.

Robert L. Reeves will become general manager of the J. B. Ford division of WYANDOTTE CHEMICALS CORP. Mr. Reeves comes from the B. F. GOODRICH CO., where he has been in charge of store merchandising.

John D. Smetzer, industrial relations director, was made vice-president in charge of industrial relations of the WEATHERHEAD CO. in Cleveland. John D. Baldwin, Jr., was appointed chief engineer.

Frank L. Condit, received the appointment as district representative to the Chicago branch of the Berger Mfg. Div., REPUBLIC STEEL CORP., in Cleveland.

T. E. Alwyn has been named general manager of sales for AMERI-CAN CAN CO., New York. Mr. Alwyn, who has been associated with the can manufacturing company for more than 25 years, will have direct supervision of the firm's sales activities in the United States, Canada and Hawaii.

Burt S. Burke, was appointed manager of WESTINGHOUSE ELECTRIC CORP.'S lighting division with headquarters in Cleveland.

Harry E. Lewis was appointed assistant comptroller for the WORTH-INGTON PUMP & MACHINERY CORP., Harrison, N. J. Mr. Lewis succeeds Joseph A. Schallenberg who died December 16 of last year.

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AGE



R. C. KNOLL, vice president in charge of manufacturing, Inland Steel Products Co.

R. C. Knoll, formerly Milwaukee works manager, was named to the position of vice president in charge of manufacturing at INLAND STEEL PRODUCTS CO. in Milwaukee.

John C. Hafpson, former Indiana field representative for the PENN-SYLVANIA SALT MFG. CO.'S special chemicals department, has been named sales manager for the department's newly formed Chicago district.

M. Robert Wilson, was handed the general sales managership of THOR CORP. in Chicago. Simultaneously, Mr. Wilson announced his resignation as president of MASON-WILSON, INC., consulting firm of Chicago and New York.

Phil Arnold, vice president of the GARLOCK PACKING CO., has voluntarily relinquished his duties in charge of the company's sales department at Palmyra, N. Y.

S. M. Washabaugh has been named a vice president and director in charge of NATIONAL SCREW & MFG. CO. of California. Formerly district sales manager at the Cleveland plant, he



smaller, shorter stroke solenoids — lower amperage simpler electrical controls — high air economy...

● Small solenoids traveling through only a 1/8" stroke move a small pilot valve plunger to apply air to the operating piston to move the main valve plunger. All operating parts are rugged, yet weigh only a few ounces. Reduced amperage eliminates intermediate relays, simplifying control circuits. Positive high cycle operation, without destructive impact, reduces maintenance and minimizes trouble due to voltage variations. 2-way, 3-way, 4-way and 5-way designs. 3/6" to 1" sizes, with bucking cylinder return. Send for Data Sheet No. 1611. It gives full details.



Quick-As-Wink Control Valves



Manufactured by C. B. HUNT & SON, Inc.

1911 East Pershing Street, Salem, Ohio

IRON AGE INTRODUCES

Continued

will head the new Los Angeles facili-



CHARLES W. HUSE, director of public relations, United States Steel Corp. subsidiaries western district, whose appointment was announced recently.

Russell H. Lutzenhiser, formerly assistant superintendent of the Electric Furnace Dept. of the Midland Works, CRUCIBLE STEEL CO. OF AMERICA, New York, has been appointed superintendent of that department.

George R. Best, of F. H. McGRAW & CO., has been appointed manager of the engineering and construction firm's Pittsburgh office to succeed Francis J. Tytus who has resigned.

Wayne D. Staley, formerly New York district manager for DURION CO., has been appointed general sales manager and will be located at the home office at Dayton.

Glenn A. Caldwell was appointed engineering supervisor of the Detroit engineering and service department of the WESTINGHOUSE ELECTRIC CORP.

James A. Setchell has been appointed San Diego representative of the ALLEN-BRADLEY CO., Milwaukee. He operated as a representative of the Trumbull Electric Co. for many years prior to starting his own oper-

ations as manufacturers' representa-

Raymond R. Beardsley has tendered his resignation as secretary of the SEALED POWER CORP., Muskegon, Mich. He will continue as vice-president and a director of the company. Mr. Beardsley has served the company for 30 years, starting in the Payroll Dept.

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HAROLD A. EDLUND, director of sales, Arco Co.

Harold A. Edlund received the appointment to the office of director of sales of ARCO CO., Cleveland and Los Angeles manufacturer of paints, varnishes and lacquers.

Frederick J. Mayor and Donald W. Neville were both elected to the board of directors of F. H. McGRAW & CO., international engineering and construction firm of New York.

Paul C. Wilmore has been appointed regional manager of REYNOLDS METALS CO., Louisville, building products division, region I, which comprises the eleven Western states.

Harry J. Anderson has been promoted to manager of the exhibit section of the advertising division of UNITED STATES STEEL CORP. of Delaware.

Staneley S. Schneider was named to the post of engineering manager of the engineering and service department at WESTINGHOUSE ELEC-TRIC CORP. in Pittsburgh.

James Lester Madden has been elected a member of the board of directors of the BOSTON AND MAINE RAILROAD. Mr. Madden is president and a director of the Hollings-

Turn to Page 120

High quality gears and gear assemblies can be produced with money saving efficiency when our engineers make a careful study of your specifications and apply production know-how to your requirements. Most of the executive personnel and shop machine operators at Amgears have a backlog of many years of experience in gear manufacturing and metallurgy, and a thorough knowledge of cost saving methods. Your gear production is in good hands at Amgears. Write now for your copy of Amgears Case Histories of particular interest to designing engineers and purchasing executives. ING. AMGEARS, INC. 6633 W. 65th St. Chicago 38, Ill. Phone: Portsmouth 7-2100 CONTRACT MANUFACTURERS



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PUBLICATIONS

Continued from Page 34

eration of shunt and compound wound generators in parallel and information on the company's marine units. Allis-Chalmers. For more information, check No. 10 on the postcard on p. 35.

Sprockets

A 16-p. bulletin lists specifications and prices for Rex Stock Size Cast Sprockets of cast iron or Temperim, in both arm or plate center types. Chain Belt Co. For more information, check No. 11 on the postcard on p. 35.

Tool Specialties

The enlarged line of machine handles, levers, cranks, hand wheels, threaded plastic balls, cast iron knobs and other tool specialties are described in 32-p. engineers' reference catalog. Reid Tool Supply Co. For more information, check No. 12 on the postcard on p. 35.

Tube Fittings

Engineered to meet varying conditions of pressure, temperature, corrosion, vibration, mechanical strain and physical abuse, Parker tube fittings, made in various materials and in a wide range of shapes and sizes, are described in 56-p. illustrated catalog. Parker Appliance Co. For more information, check No. 13 on the postcard on p. 35.

Reaming Wall-Chart

The Wendt-Sonis wall chart of reaming instructions containing a resharpening graph for all reamer sizes, instructions on how to eliminate chatter, suggested feeds, speeds and stock removal, and recommendations for use of coolants and lubricants is now available. Wendt-Sonis Co. For more information, check No. 14 on the postcard on p. 35.

Resume Your Reading on Page 35

Announcing ... the New KENNAMETAL DISC FILE



For Use on Non-ferrous Metals and Plastics . . .
to Snag Castings, Cut Off Flashing,
Face and Square Surfaces, etc.

Use of this new Disc File will enable you to reduce the time and cost of operations normally performed by grinding, and eliminate the expense involved in frequent replacement of abrasive wheels. It will soon pay for itself in the remarkable savings effected.

Triangular prisms of strong, hard Kennametal (90.0 Rockwell A) are copper-brazed to the face of a steel back-up plate, in a number of courses, to form a multiplicity of sharp, sturdy cutting edges. They are so shaped, grouped, and positioned as to provide a 30° negative axial rake, a 30° clearance angle, and a 10° negative radial rake.

This construction affords the most efficient and free-cutting action. Material is removed in sizable chips—no abrasive dust. A remarkably smooth, true surface is produced. Eccentricity of the intermediate courses of prisms assures uniform cutting action across the face of a workpiece. When the file is run at proper speed, workpieces remain cooler than with abrasive wheels because chips dissipate the heat of cutting.

Kennametal Disc Files can be mounted on a grinder, abrasive disc machine, motor end, or disc file machine, by means of a suitable adapter. Recommended speeds: 5000-7000 SFM for harder materials; 8000-9000 SFM for soft or gummy materials.

Four sizes are available—6", 8", 10", and 12" diameters, priced at \$107.00, \$185.00, \$255.00, and \$325.00 respectively. Catalog DF49 gives more complete information. Write for your copy.



January 26, 1950

AIRCRAFT QUALITY Alloy Steels

AVAILABLE FOR IMMEDIATE SHIPMENT FROM OUR CHICAGO WAREHOUSE. ALLO

STEELS

SPECIFICATIONS

AMS 6260 AMS 6270 AMS 6272 AMS 6280 AN-S-14A AMS 6324 AMS 6415 AN-QQ-756A AMS 6320 (Hex)

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COLD DRAWN
HOT ROLLED

WE SEND A CERTIFIED
ANALYSIS WITH EVERY
AIRCRAFT SHIPMENT,
AND THE RESULTS
OF JOMINY HARDENABILITY TESTS WHERE
NECESSARY.

OUR COMPLETE STOCK LIST OF AIRCRAFT, ALLOY & 1045 HR SENT UPON REQUEST.

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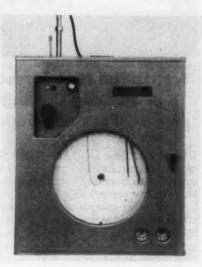
PRODUCTION IDEAS

Continued from Page 38

tightening clamps the collar onto the tube to form a seal that is said to be leakproof. The Uniflare fitting may be disassembled and reassembled many times without impairing the tightness of the seal. The entire fitting is anodized for corrosion resistance. Scovill Mfg. Co. For more information, check No. 27 on the postcard on p. 35.

Refractometer

A precision refractometer, designed to eliminate human error in controlling process pipe lines, covers the entire range of refractive



indexes from 1.32539 to 1.54409 and is claimed to have an accuracy over the entire range to within 3 parts in the fifth decimal place. It controls the flow of industrial process streams by refractive index instantaneously and continuously; and records the results 24 hr a day. This unique control instrument, finds application in the production of plastics, synthetic rubber, and all aqueous solutions not having suspended solids. In operation, a sodium light sending rays through the liquid to a photoelectric cell causes the recording pen to operate. Movement of the pen effects pressure changes in an air controller that in turn operates diaphragm valves in the process pipes. Precision Scientific Co. For more information, check No. 28 on the postcard on p. 35.

Threading Attachment

External or internal thread chasing can be performed easily by an ordinary machine operator with the Meritool lathe attachment. The Meritool automatically retracts the



lathe tool from the work at any desired setting and simplifies chasing of precision threads. The tool is quickly mounted on any 9 to 14-in. capacity V-way lathe. Motch & Merryweather Machinery Co. For more information, check No. 29 on the postcard on p. 35.

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Sander-Saw

A 4-in. belt-sander quickly convertible into a 6-in. portable saw weighs 18 lb and is properly balanced for easy operation. The sander does any kind of surfacing job with speed, from roughing-out with coarse belts, to a ripple-free finish when used as a final finishing tool. The belt is held under



constant pressure, and centers perfectly on the pulleys. Cummins Portable Tools. For more information, check No. 30 on the postcard on p. 35.

Guide-Pin Cover

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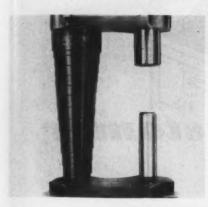
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Punch press operators are safeguarded from injury and the machines from excessive wear and damage, by a new guide pin cover known as Elasticone. The Elasticone entirely encloses the pin and



bushing area and completely eliminates the pinch-point. The guidepin cover is a cone-shaped, spiral wound, flat-steel spring of special alloy and temper. It is held in position by its own spring tension. Elasticones accommodate punch press die sets with 1½ to 6-in. diam bushings and open heights ranging from 4 to 24 in. Central Safety Equipment Co. For more information, check No. 31 on the postcard on p. 35.

Fork Trucks

To meet the need for a completely functional fork truck in the 3000 and 4000 lb capacity class, the Baker type FT center-control fork truck was designed omitting all frills and incorporating only those



features that would contribute to efficiency, economy, safety, and operator convenience and comfort. These new trucks feature unitwelded frames, heavy formed channel uprights, high visibility, operator convenience of padded seats that may be entered from either side, soft-touch brakes, high-profile cushion tires, and rugged drive axle. Both types have an outside turning radius of 73 in., single lift of 64 in., telescoping lift of 126 in., and wheelbase of 43 in. Baker-Raulang Co. For more information, check No. 32 on the postcard on p. 35.

Pit Furnace

In the new Rockwell electric recirculating air type pit furnace, the fan mechanism is located at the bottom of the heating chamber in order to acquire uniform circulation of heated air. The advantages of efficiency, speed and space economy gained by basket loading for the heat treating of small batches of metal parts, are retained in this new model pit furnace for drawing, tempering and normalizing to 1200°F. Heat is provided by a series of removable Nichrome electric heating coils completely sur-

rounding the alloy steel basket that rests on an alloy grid plate. The heating chamber is insulated with a $4\frac{1}{2}$ -in. layer of refractory insulating brick backed up with $3\frac{1}{2}$



in. of block insulation. The furnace is available in capacities of 200, 300, 600 and 1500 lb of steel per hr. W. S. Rockwell Co. For more information, check No. 33 on the postcard on p. 35.

Resume Your Reading on Page 39



Weldimatic Welding Torch "W-46", with built-in automatic Gasaver. Time study in auto plants showed an average gas savings per man of \$4.80 per day with this Weldit Torch. Weighs only 13 ounces. No operator's fatigue.



... has been in continuous use throughout the world for over 20 years — slashing fuel costs, lessening fire hazards and improving safety conditions.

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DETROIT 6, MICH.





by Jack R. Hight

ON TAKING ISSUE—Now on this friendly little publication, we make mistakes, and often admit them, in a public recanting ceremony, if we think it will do any good. But there are some subjects on which we are very sensitive. You learned on reading Fatigue Cracks last week that a British steel magazine recently unleashed an attack on The Iron Age. This unkind behavior will not be condoned.

The British Steelmaker can't understand the humor in THE IRON AGE, as represented by The Bull of the Woods (p. 50), and those cartoons in the news section (p. 86). In three pages of print our overseas contemporary makes two points.

- The Bull is old-fashioned in technique and isn't very funny.
- (2) The miniature cartoons are priceless, but how can they be offered in the same publication with the old Bull.

This is all strangely reminiscent. When I was living in England, my nearest English friend came to me often and seriously, to ask just that question, "What's funny about the Bull of the Woods?"

This kind of chatter is dangerously close to criticizing our sense of humor, and that is about as dangerous as criticism can get. Without presuming to defend J. R. Williams' work, as it will certainly speak for itself,

we have a theory on this phenomena.

We think the Bull is funny because we started in this business with our hands dirty in the machine shop. We saw the straw bosses at work, and we saw the bootlicking that goes on. The material portrayed is not full of big belly-laughs, because there aren't many big belly-laughs in a machine shop.

Instead it is the situation humor that goes for a little comic relief in an otherwise grinding workday in the shop. Now we wouldn't understand this ourselves if we had never worked in a shop. The average Englishman who edits a business paper is an educated man, who has never taken a file to a burring job in a shop, and is quietly proud of the fact. Sorry, old boy, but this kind of thing just isn't going to carry across to you, and you might as well quit reading it. We think it's good, and will keep on printing it.

Now in the meantime, and without any connotations of abuse, we want some help from our British friends. We have in hand a book of alleged British Proverbs, and don't quite understand some of them. Can anyone volunteer to help us with, "It is very hard to shave an egg," or "To send for the yard-wide pack thread," or "It's the mouth that makes the cow?"





FATIGUE CRACKS

Continued from Page 20

though the top sweeps down a little more sharply towards the rear than on most of the new notch back models.

The big boner seems to have been in attening out the hood entirely too much. Possibly the designers forgot all about the engine in their enthusiasm. As for those covered headlights, well—somebody couldn't quite-get the 1937 Cord out of his mind, or was it the Cord?

An "i" for an "i"

Writes C. B. White of American-La France-Foamite, "On p 75 of our f.f.j. (Jan. 12) there's a good lick for stainless but the author's name is puzzling. (Ed. note: It was printed 'Bill Lloyd'.) I'm familiar with the double 1-o-y-d but what's this B-double i-double 1? How's he pronounce it?"

Our detectives have deduced, after a full study of psychological influences as set forth in the Hiss case, that the linotype operator was a great egotist and thought he could get away with slipping in the extra "i" unnoticed. Next question?

Puzzler

Answers to the Dec. 8 marble puzzle are beginning to drift in now from the Canal Zone and the British Isles, but proceeding to other matters we want to clear up some business with E. A. Bostrom of Pope Trading Corp., who sent in a correct answer to the Dec. 29 puzzler.

"First off," he says, "I wish to submit an aptronym—Mr. Charles T. Post writes a 'column' for the IRON AGE."

Trying not to blush, we must decline with thanks the nomination to the honored ranks of aptronymists. If we belonged, we might be tempted to jealously take pot shots at the other candidates and break up the organization.

But we'll submit Mr. Bostrom's puzzle to the electorate: A barrel has three spigots. The first spigot can empty the barrel in 1 hr, the second can empty it in 2 hr and the third can empty it in 3 hr. How long would it take to empty the barrel if all three spigots were turned on at the same time?

He whispered the answer to us, which he read in a book, but confidentially neither one of us have figured out how to reach it.

More to the point, we should think, would be to find out what's in the barrel and who left the spigots turned on. It all sounds very wasteful.

Resume Your Reading on Page 21

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A curved, processed virgin rubber attaches on bottom of door with special furnished hardware, forms a DOUBLE SEAL to floor on inside and outside, assuring protection against cold, rain, dirt, etc.

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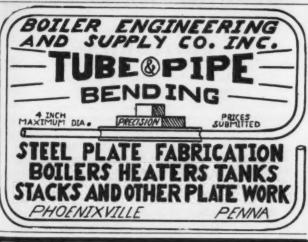
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THE CONVENTIONAL ARBOR PRESS has come a long way in the past few years. From such every day tasks as straightening and bending, it has grown into a full size production tool. Today — because of their low initial and operating cost — you'll find KRW Arbor Presses doing hundreds of manufacturing operations in all sorts of plants. A little ingenuity, combined with simple, inexpensive dies can save you money by releasing heavier, more expensive equipment for larger work.

KRW Hydraulic Arbor Presses are available in varying sizes and tonnages, either hand operated, air operated or motor-driven. Tell us your needs...we are fully equipped to advise and engineer presses to do your particular job. Deliveries on standard presses within 10 days.

NEW KRW 100-Ton Stanking, Forming, Stamping Press
Batteries of these New KRW Presses are now in use in many
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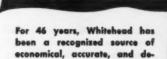
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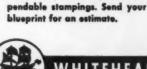
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IRON AGE INTRODUCES

Continued from Page 112

worth and Whitney Paper Co., Winslow and Madison, Me., and also president of the Kennebec Water Power Co. of Maine. Frank W. Rourke was appointed vicepresident of operations and J. W. Smith vice-president assigned to special duties.

Robert L. McFadin has been named manager of the merchandising sales department of the MARLEY CO., INC., Kansas City. For the past year, he had been in charge of merchandising sales in the New York office.

Thomas A. Brown becomes assistant manager of operations of the Pittsburgh and Graham plants of PITTSBURGH SCREW & BOLT CORP.

A. B. Sloan, vice president in charge of sales of the NORTHWESTERN STEEL & WIRE CO., Sterling, Ill., is retiring from his present position which he has held since 1928.

J. D. Allan was appointed to the managership of Pratt & Whitney domestic machinery sales, a division of NILES-BEMENT POND CO. Other promotions in the same company included J. C. Molinar, manager, Pratt & Whitney domestic small tools and gage sales; H. Reichert, manager, Pratt & Whitney foreign sales; R. M. Johnson, manager, Chandler-Evans sales; J. Potter Cunningham, vice presidentsales manager, Potter & Johnston Co.; and V. L. Howe, acting manager, advertising.

OBITUARIES

Edward H. Bell, vice president of American Can Co. in charge of West Coast, Alaskan, Hawaiian and British Columbian operations, died at his home in San Francisco after a brief illness. He was 61.

Herman Schifflin, 81, who retired in 1942 as manager of the crushing, cement and mining machinery department at Allis-Chalmers Manufacturing Co., died on Jan. 9.

Harry S. Smith, vice president of Burgess-Norton Mfg. Co. of Geneva, Illinois, died on Jan. 10. He had been associated with the company for 19 years.

Stephen C. Cheney, 67, president of S. Cheney & Son of Manlius, N. Y., passed away on Jan. 5.

George H. Priggen, 71, a leading figure in the New England sheet metal business, died on Jan. 9 at his home in Boston, Mass.

B. Franklin Bales, 37, sales manager of Shakeproof Inc., a division of Illinois Tool Works, Chicago, died recently.

Dr. Fritz W. Meyer, of Sulzer Bros. Foundries in Switzerland, passed away recently at his home in Winterthur, Switzerland.

Resume Your Reading on Page 23



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A hardness tester particularly adapted for use on CASTINGS and FORGINGS

Puts an actual lead of 3000kg on a 10mm ball. Throat, 4" deep. Gap. 10" high. Weight, 26 lbs.

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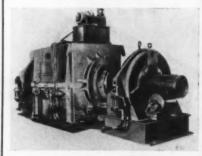


GUARANTEED

42" x 24' c/c H-B-P Lathe, M.D. 36"/52" x 30 LeBlond Lathe, mtzed. 3-\$25 Kempsmith Universal Millers, 1944 #4 Cincinnati Plain Hi-Power Miller 72" Colburn Vert. Bor. Mill, PRT, M.D. 54" Colburn-Consolidated Vert. Bor. Mill, PRT. 36" Rogers Vertical Turret Lathe, 1942 #1-18 #3-24 Cincinnati Prod. Millers \$5 Gisholt Turret, bar & chuck, 1943 14" x 36" Landis Universal Grinder, 1542 12" x 36" Horton Universal Grinder, 1941 6" x 30" Norton Plain Grinders 5" Sellers Horiz. Mill, 12'6" to brg., 1943 16" American V-ram Shaper, M.D. 24", 12" Dill Trav. Hd. Slotters 30" x 30" x 8' N-B-P Planer, direct M.D. 24" x 24" x 4' Liberty Shaper—Planer, M.D. 7" Peerless Hydracut Saw, 1942 \$6 Mitts & Merrill 31/2" Keyseater 6000\$ "Pneumatic" Air Drop Hammer, 48" x 60" \$28 Hazel Hammer, M.D. 4" Oster "Rapiduction" Pipe Threader



FOR SALE



YODER PIPE CUT-OFF

Capacity 14"-24", OD Pipe or Tubing. Complete with controls, pumps, motors and chucks.

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FOR SALE

Modern Flat Wire Rolling Mill. Small profitable going business located in upstate New York.

Five medium size, single-stand, two-high Mill and accessory Equipment for Cold Rolling Round Edge Flat Wire and Cotter Pin Wire.

Founder and Owner retiring. Plant available for immediate possession with unfilled orders and no doubt present clientele will continue.

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THE CLEARING HOUSE

NEWS OF USED, REBUILT AND SURPLUS MACHINERY

Brooklyn unemployment rise aids chemical equipment business

Philadelphia dealers not anxious to turn over scarce machinery

Supplemental materials handling line brings additional sales

Chemical Equipment Sales Aided by Rising Unemployment

Brooklyn — The unemployment situation in the chemical and process industries seems to be having a direct effect upon used and rebuilt chemical equipment sales in this area. Many employees in the chemical industries who have been recently let out of jobs are now going into business for themselves and are, in general, producing in their own establishments the same items that they formerly produced for the larger corporations.

Equipment sales of such items as dry powder mixers; filter presses; stainless steel tanks; distillers; chemical drying equipment; drug, chemical, and cosmetic bottling and packing equipment; indicate the varied line of businesses being started.

Other business hinges upon changes being made in larger firms where new product expansion or modernization is under way. Dealers have noted that much of the equipment traded in by the larger firms toward later models is quickly sold to these newly established producers.

Most Brooklyn dealers reported a 10 to 15 pct drop in sales during 1949, but indicate that present activity is markedly improved.

Philadelphia Dealers Find Good Used Machinery Scarce

Philadelphia — Good used machinery has been rather scarce, according to reports from dealers in this area. Philadelphia dealers do not seem overly anxious to turn over stock too hastily. Boring

mills, for example, are considered to be as good as money in the bank. Some dealers have been fortunate during 1949 in being able to acquire equipment on a plantwide basis. For this type of machinery there is generally a good market, allowing a profitable markup over purchase price but still permitting a reasonable price to the customer.

Dealers have been scouring the country for good used tools. It is not unusual to find them all over the east and even well into the midwest looking for machinery in heaviest demand. They find that buyers are looking over the market carefully before buying.

Profits have been very fair for some dealers in this district during 1949. These are naturally the ones who view the prospects for 1950 most hopefully.

Dealers Consider Potential Of Materials Handling Units

Brooklyn—To supplement regular machine tool activity, a few dealers in the Brooklyn area are considering the sales potential of material handling units such as cranes, conveyers, and fork and lift trucks. This thinking has recently resulted in the sale of a heavy crane by a dealer just entering the field of material handling equipment.

Most used and rebuilt equipment dealers in this area report that bending rolls and heavy presses are currently moving, and that prospects for these industrial units as well as machine tool items look good.

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